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MANAGEMENT
OF
INFANTS AND CHILDREN.

THE CENTRAL DISPENSARY

MANAGERS

INFANTS AND CHILDREN

BY JAMES HAMILTON

WITH ILLUSTRATIONS BY

THE REV. JAMES HAMILTON

OF THE CENTRAL DISPENSARY

AND THE DISPENSARY

FOR THE INFANTS AND CHILDREN

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OF THE CENTRAL DISPENSARY

The Medical Society of London S.W.11
presented by Dr John Davidson
1862.
HINTS

FOR THE
TREATMENT
OF THE
PRINCIPAL DISEASES
OF
INFANCY AND CHILDHOOD,
ADAPTED TO
THE USE OF PARENTS.

BY JAMES HAMILTON, M. D.

PROFESSOR OF MIDWIFERY IN THE UNIVERSITY,
AND FELLOW OF THE ROYAL COLLEGE OF
PHYSICIANS OF EDINBURGH.

THIRD EDITION.

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1821.

HINTS

TO THE

TEACHERS

OF

TRINITY COLLEGE

OF

EDINBURGH

AND

ST. ANDREW'S

UNIVERSITY

OF

EDINBURGH

AND

EDINBURGH,
Printed by Alex. Lawrie & Co.

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TO

CHARLES STUART, ESQ. OF DUNEARN, M.D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS,

&c. &c.

MY DEAR SIR,

THE former Editions of this little Work were dedicated to you in the ceremonious style which your station, at the time, as President of the Royal College of Physicians of Edinburgh, required.—In the present impression, I venture to address you with less formality, though with the same sentiments of respect and of gratitude. I assure you, that I can never forget the many marks of disinterested friendship with which you honoured me at a very early period of my professional life,—and that I shall ever consider myself,

Your obliged

and affectionate

Friend,

JAS. HAMILTON, JUN.

EDINBURGH, 23, *St. Andrew's Square*,
February 20, 1821.

P R E F A C E.

As the Author has not voluntarily obtruded on the Public the following pages, he does not deem it necessary to enter into any formal discussion on the propriety of addressing directions for the cure or alleviation of diseases to general readers.

His father, the late Dr. Alexander Hamilton, published, in the year 1780, "A Treatise of Midwifery, comprehending the Management of Female Complaints, and the Treatment of Children in early Infancy, for the use of Female and other Practitioners, and of Private Families:" and requested his son to superintend the several editions of the Work, which might be called for after his day.

In the performance of this duty, in the year 1811, his son found it necessary to new-model and to extend every part of the book; and while he did this, he endeavoured both to retain the popular language of the original, and to give a scientific form to the whole, as he wished it to serve as a text-book for those parts of his public lectures

which relate to the diseases of women and children.

After a considerable part of the Work, thus altered, had been printed off, it was suggested to him, that a separate publication of the Hints for the Treatment of the Principal Diseases of Infancy and Childhood, might be an acceptable present to many parents.

In these sketches, the Author ventures to hope, that the descriptions of the several diseases are so accurate, as to enable the uninitiated to distinguish them readily ; and that the practical directions are so definite, as to prevent the remedy adapted to one disorder from being applied to another. The scientific reader will find the practical precepts different, in many respects, from established doctrines. They are the result of the attention which the Author has bestowed, for above twenty years, on those complaints ; and he trusts, with confidence, that the experience of every practitioner who adopts them will confirm their utility.

THE above prefatory remarks were prefixed to the former editions of these Hints.—In the pre-

sent impression, the Author has great satisfaction in having had it in his power to introduce much new matter.—From his extended opportunities of practice, he has had occasion to observe, more minutely than formerly, many of the phenomena of the diseases noticed in the following pages, and to judge more accurately of the effects of the remedies employed.—The professional reader will, therefore, remark, without surprise, that experience has led him to alter his opinions on several important subjects.

EDINBURGH, 20, *St. Andrew's Square*,
February 20, 1821.

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MANAGEMENT OF INFANTS AND CHILDREN.

CHAPTER I.

MANAGEMENT OF INFANTS.

THE infant, when in the womb, surrounded by a fluid which defends it from external accidents, and supplies it with an equable degree of heat, nourished by a somewhat which its own bowels do not prepare, and furnished with the vivifying principle of air, by a beautiful and wonderful machinery, may be said to vegetate only.

But when separated from the mother by the process of delivery, it undergoes a great and important revolution. The supply of heat, and protection from injury, must depend on the attention of others; nourishment must be prepared by the digestion of food received into its own stomach, and the benefits of air can be obtained by the operation of breathing only.

Had not nature bountifully provided for these

changes, the human race must have become extinct.

Besides in external size and form, the bodies of infants differ from those of grown persons in many respects. A knowledge of these tends to elucidate the ordinary management of infants in health, and during disease, and ought therefore to be explained before that subject be considered.

Thus the skin is more delicate, and beautifully coloured, and is more sensible to external impressions, for the scarf-skin is very thin and soft.

The bones are soft, spongy, and imperfect. Those which are afterwards single are generally divided into several portions; and almost all of them have their extremities or edges in the state of gristle.—Their appendages, too, are in much larger proportion, and hence the moveable and immoveable articulations are less firm.—The fleshy parts are more soft, and less distinctly marked; and their actions are consequently not so powerful; and the cellular substance is in a greater proportion. For these reasons the bodies of infants have no exact regularity of shape, and have no steady support; the movements of their different limbs are limited, and their bowels are very imperfectly defended from external injuries.

While all the vessels are much more numerous, their action is more frequently repeated; and therefore the pulse of infants is always very quick, and all the secretions and excretions are more

speedily performed, and in greater relative quantity. The nerves are in larger proportion; their powers are also greater: so that many circumstances, as cold, heat, &c. have considerable influence on them, which do not seem to affect grown persons.

All the fluids are more mild and watery, and furnished in greater quantity. The chyle and blood are more nutritious, and the latter is less acrid. The slimy and gelatinous fluids are more bland; the bile and urine have very little acrimony.

When the various parts of the person are examined, it is found that the head is large in proportion to the body. Its bones are not indented into each other, but connected by membranous layers: hence the brain, which is very soft, may be readily compressed and injured. The face has not the expression which it afterwards assumes. The eyes at first have no power of distinguishing objects. They, and their appendages, are remarkably delicate; and therefore suffer from the slightest accidents. The nose, from the state of its bones, is also much more exposed to injuries, and the sensibility of its nerves renders it highly irritable; but the bad effects which would often be the consequence of this structure are probably counteracted by the mucus with which its inside is constantly lubricated. The ears for some time, like the eyes, do not appear to possess much power. The mouth is not usually supplied with

teeth till some months after birth ; for the teeth, although formed, remain under the gums till that time. The lower jaw-bone is divided by a portion of gristle into two pieces.

The trunk of the body is not so firm as to support properly the superincumbent parts, nor to defend the organs contained in it ; for a great part of the spine is gristly, and the breast is entirely so. The ribs indeed are more perfect than many of the other bones ; but they can easily be made to yield from the state of the breast ; and the fleshy parts, &c. which surround the belly, being soft and delicate, cannot afford resistance to any circumstance that may injure the bowels.

Immediately after birth the lungs hitherto small, collapsed, and supplied with little blood, begin to perform the operation of breathing, and to receive the whole blood of the body ; which functions continue during life. At first those organs are weak and irritable. The heart acts with considerable force and quickness.

The liver, which is of a remarkably large size in proportion to other parts, and consequently not so well defended as afterwards, is rapidly diminished, especially on the left side, after birth. The stomach is of a small size, and of great delicacy of texture, and the same may be said of the various portions of the intestinal canal.—In the great guts, a substance different from what is observed in grown persons is lodged : it is a black, viscid, tenacious matter, called in medical language the

meconium. The kidneys are lobulated ; and the renal glands are larger in proportion. The urinary bladder, and other parts within the bones of the basen, are differently placed, as that cavity is very imperfect, from the gristly state of the bones of which it is composed.

From the condition of the articulations, and the proportion of gristle in the superior and inferior extremities, the limbs are incapable of performing their proper functions for a considerable time.

The changes by which the size and strength of every part of the body are increased, and the perfection of the several bowels is completed, proceed gradually, and are not fully accomplished till the period of puberty.

SECTION I.

Means to be used for the Recovery of Still-born or Weakly Infants.

THE laudable and active exertions of the HUMAN SOCIETY, by having been the means of restoring life on many occasions, where it was formerly thought impossible, have proved to the world, that apparent death happens more often than was hitherto believed.

As still-born infants have been occasionally recovered under circumstances where experience

alone could have encouraged such hopes, practitioners of midwifery have been taught the importance of employing, with patience and attention, the means conducive to this purpose.

Still-born infants are found in three different states; for there is either no pulsation in the umbilical cord; or the pulsation is soft and distinct, and the infant has the natural appearance; or the pulsation is oppressed, the shape of the head is deranged, and the face of the infant is livid. The following means, suited to each of these states, are pursued in the Edinburgh General Lying-in Hospital.

I. When no pulsation is felt in the cord.*—1. The infant is to be instantly separated from the mother, the cord being tied by a slip knot.

2. It is to be immersed in water warmed to the degree of blood-heat with its head placed uppermost.

3. The lungs are to be filled with air by means of a common syringe, (the pipe of which is to be inserted into one nostril, while the other and the mouth are carefully closed), or any other ready contrivance, and are then, by gentle pressure on the breast, to be emptied. In this way, the lungs are to be alternately distended and compressed for some time.

* If there be marks of putrefaction, it need scarcely be remarked, it is unnecessary to make any attempts at resuscitation.

4. Should the action of the heart be now perceived, the same means are to be continued until the infant exhibit the usual marks of beginning respiration, when the artificial distention of the lungs is to be only occasionally repeated, and all pressure on the breast is to be avoided.

5. But if, notwithstanding these means, the pulsation in the heart be not restored, the infant should be taken out of the warm water, placed before the fire, carefully rubbed, and then wrapt in warm flannel.

6. A glyster, consisting of a tea-spoonful of spirits, and two or three table-spoonsful of warm water, should then be exhibited, and the temples, nostrils, and teguments of the face round the mouth, should be gently touched with a feather dipped in vitriolic æther, or spirits of hartshorn.

7. In the event of the failure of all these means, if the infant be apparently full, the effects of a small discharge of blood may be tried, by replacing it in the warm water, and removing the ligature from the cord.

II. When the pulsation in the cord is soft and distinct, and the infant has the natural appearance.—1. So long as the placenta remains attached to the uterus, the child ought not to be separated from the mother.

2. The body should be carefully wrapt in warm flannel, the nostrils and lower parts of the face should be touched with a feather dipt in vitriolic æther, or spirits of hartshorn, or volatile tincture

of valerian; a little spirits should be poured on the breast, and the buttocks and soles of the feet should be slapped with the palm of the hand.

3. If the after-birth become detached, (which is known by the lengthening of the cord), the child must be immediately separated, and the above (2.) means employed.

4. Should the process of breathing commence after these means have been used for a few minutes, nothing else is to be done than keeping the infant warm, with its face freely exposed to the air.

5. But should this event not take place, the lungs are to be distended, &c. as in the former case.

III. When the pulsation in the cord is oppressed, the shape of the head is deranged, and the face of the infant is livid.—1. The infant is to be immediately separated from the mother; the cord being loosely tied with a single knot.

2. Blood is to be allowed to issue from the cord until breathing begin, or until the natural colour of the face be nearly restored; a table-spoonful or two is the quantity commonly required for this purpose.

3. Should the beginning process of breathing proceed slowly, very gentle means may be employed to restore the proper shape of the head, but otherwise the efforts of nature alone are to be relied on.

4. If no signs of breathing be perceived, the cord is to be tied, the infant placed in warm wa-

ter, and the lungs are to be from time to time distended with air, by the means already recommended, and the additional discharge of a small quantity of blood may be tried.

5. The use of every thing irritating must be carefully avoided.

Although alive when born, the infant, in some instances, lives only a short time. If the lips be pale, and the pulsation in the heart very feeble or slow, it may be suspected that this is owing to some cause which is not cognizable to the senses. On the supposition that it proceeds from a deficiency of vitality, stimulants have been applied to the surface, as a little brandy, or spirits of harts-horn, rubbed on the ribs and back-bone, &c.; and certainly such means have occasionally proved efficacious, though, in the majority of cases, they fail.

When the extremities are of a purple or blueish colour, and the breathing is impeded or unnatural, it is generally found that there is a defect in the heart or lungs, (more commonly the latter), which is beyond the power of any remedy. In one case of this kind, where the infant seemed uncommonly full and vigorous, several leeches were applied; but, although their bites discharged a good deal of blood, neither was the breathing relieved, nor the dark purple colour of the surface altered, so that death followed in a few hours.

SECTION II.

Original Imperfections.

INFANTS are not always born in a state of perfection with respect to the structure of their bodies ; for sometimes they have deficient, superfluous, or misplaced parts, natural passages closed, and marks on various parts. Many of these imperfections admit of no remedy, while others may be easily rectified. It would be inconsistent with the nature of this work to describe minutely all the species of malconformation which occasionally occur ; and therefore the following observations relate only to those most frequently met with.

There are sometimes blemishes about the mouth, which may prevent sucking. Of these, fissures in the lips always constitute the most remarkable deformity. These imperfections appear in many different forms ; for sometimes the fissure exists only in one lip, generally the upper one, and is occasioned merely by a division of the parts. In other cases, there is a considerable loss of substance between the divided parts. In some instances there are two fissures in one lip, or both lips are affected ; and in others the fissure is not confined to the lips, but extends along the roof of the mouth. All these different species of the

same deformity receive the general name of *Hare-lip*.

The treatment of the hare-lip must be varied according to many circumstances, which can only be determined by an experienced surgeon. If the child can suck, the operation by which alone the blemish can be removed, should be deferred till he be several months old at least, as the parts will then be better adapted for retaining the pins by which the cure is accomplished. But when sucking is prevented, the operation may be tried, though it affords only a forlorn hope.

The tongue is naturally bound down to the lower part of the mouth, by a membranous cord, to prevent it from too great a degree of motion. Sometimes, however, the cord fixes it so much, that the infant cannot suck; in which case he is commonly said to be *tongue-tied*. It is very often imagined that infants have this defect when it does not really exist; and perhaps one instance of it does not occur in several hundreds of those who are born. The malformation may be always readily discovered by putting a finger gently into the mouth; for if this be grasped as if it were the nipple in sucking, or if the tip of the tongue appear disengaged, the membrane does not require being cut. The operation of cutting the tongue, though very simple, has sometimes proved fatal, for so great a quantity of blood has been lost as to destroy the infant; this danger may be very

easily prevented by a little attention on the part of the surgeon.

When the tongue is not bound down sufficiently, the tip may be turned back, and close up the throat. This accident, which is luckily a very rare one, must soon occasion death. It may be discovered by the threatening suffocation or convulsions, and by the introduction of the finger into the mouth. The melancholy consequences of this disease can only be prevented by pulling back the tongue, or exciting vomiting by tickling the throat. If the infant cannot suck, although the tongue appear to be in a natural state, weakness of the lower jaw, thickness or swelling of the glands in the under part of the mouth, or some defect about the nurse's nipple, may be suspected.

The *natural passages* of infants are sometimes shut up, and prevent the usual excretions. This is known by examining the cloths and parts affected. In some cases slime alone proves the obstacle; but in others, membranous substances close up the passages.

In every instance where any thing uncommon is observed, the infant should be carefully examined by a skilful surgeon, that the proper means for affording relief may not be too long delayed. In some rare cases, it unfortunately happens that no assistance can be given. It is however generally proper to try the effect of an operation.

Deformities in the lower extremities, styled *club-feet*, sometimes occur. As they are not only

great blemishes, but also productive of much inconvenience at a future period of life, every parent is interested in their removal.

The gristly state of the bones of the foot renders a cure in most cases practicable, when the proper means are begun immediately after birth; but if the deformity be not attended to till the infant be some months old, the cure will be difficult and precarious.

For the removal of this deformity, the most simple means may be employed, the great principles to be held in view being to restore the misplaced parts to their natural situation, and to keep them there. The mechanical contrivances for these purposes have been greatly improved within these few years, for which the public is much indebted to Mr. Sheldrake of London. The late Mr. Marrison, residing in Edinburgh, acquired also deserved credit for his mode of treating such cases; and another artist in the same line, Mr. Fortune, now pursues in this (latter) city, perhaps an improved method. While every credit is due to the ingenuity and the attention of the artist, to whose management club-feet should be referred, the superintendence of the case ought always to be allotted to some regular practitioner. White swelling and other diseases of the joints have sometimes ensued from inattention to this hint.

Tumours, that is circumscribed swellings about the *belly*, if discoloured or semitransparent, are

always extremely dangerous ; but now and then instances have occurred where a cure has been effected by a surgical operation. Those tumours, which are situated at the root of the navel-string, and the base of which is surrounded by a purple-coloured thickened skin, are the most common, as well as the most fatal, varieties met with ; and yet infants with this defect have sometimes been saved.

Tumours seated upon the *Back-bone*, called in medical language *Spina Bifida*, are also occasionally found in new-born infants. If they be semi-transparent, and of a magnitude not less than half of a hen's egg, they inevitably prove fatal, though the life of the infant may be protracted for a very considerable time.

When the surface of the tumour is not discoloured, the progress of the disease, when left to nature, is generally slow, but sooner or later the swelling increases, the semitransparency takes place, an orange-coloured fluid exudes from its surface, it eventually bursts, and convulsions and death speedily follow. The lower on the spine that the tumour is situated, the more gradual is the progress to the fatal event. Thus, in one case, where it was at the very bottom of the back-bone, the child lived under this disease for nearly thirteen years and a half, during which time he had no retention of the stools nor urine, and no power of moving the lower limbs.

Some years ago, Mr. Astley Cooper of London

introduced the practice of puncturing those *tumours* with a minute needle, and compressing them firmly by means of a suitable apparatus.—That this plan has been successful, admits of no doubt, but the cases which can be treated by this method are seldom met with. Unless the tumour be of a small size and be not discoloured on its surface, any attempts for its cure or alleviation are found to be quite unavailing.

Flesh-marks, when above the surface of the skin, can always be in a great measure removed without the assistance of the knife; and even when they are on the level of the skin, their ugliness may be greatly diminished by early attention on the part of the practitioner.

Ruptures in different parts, especially at the navel, are not unfrequent occurrences; fortunately they are not attended with so much danger as similar disorders in grown people.—Where the disease is confined to the navel, a broad piece of flannel, in the form of a roller, together with pieces of adhesive plaster applied over the part with a ball of cotton, forming what has been termed by surgeons a graduated compress, by affording a safe and firm support, prove so useful, that as the infant acquires strength the rupture disappears.

The other varieties of *rupture* are often cured by the natural increase of size and strength of the body, and require chiefly attention to the due regulation of the bowels and the daily use of the

cold bath.—No truss ought to be employed for at least the first two years of life.

SECTION III.

Injuries in consequence of Birth, or of Mismatchment soon after it.

WHEN the infant has been detained a long time in the passage, the several parts subjected to pressure are liable to be injured. The most common of those injuries are swellings on the *head*, or alteration of the shape of that part.

First-born children are generally affected with some degree of swelling on the crown of the head. This, however, usually disappears in a few days, and requires no other treatment than the ordinary means employed by the nurse, viz. rubbing on it very gently a small quantity of weak spirits. When these swellings do not after a few days yield to the above means, a variety of treatment is required, such as the application of lime-water, a blister &c.; but as all such cases ought to be referred to an experienced Surgeon, it is unnecessary to specify them.

Although the shape of the head be much altered in consequence of long-continued pressure during the birth of the infant, it will soon recover the natural form, without any assistance. The practice among nurses, therefore, of endeavouring

to give the head a proper shape, by squeezing and pressing it with the hands, &c. is unnecessary, and ought never to be allowed, on account of the dangers which may be the consequence.—It is, however, a very good precautionary measure to allow the navel string to bleed freely before being tied, wherever the shape of the head is much altered.

Scratches on the head, like the marks caused by a whip-cord, frequently occur after tedious or difficult labours; but they require no particular attention, as they soon disappear.

In some cases, where the infant has come down in an unusual direction, the *face* is much affected, the eyes being inflamed, the nose flattened, the lips swelled, the features distorted, and the colour of the countenance livid. These frightful appearances usually go off in a few days, when no violence has been done by improper interference during the delivery.

Other parts, than those already mentioned, are likewise liable to swelling and discoloration from the same causes; but as they seldom prove troublesome, no other management is necessary than allowing the umbilical cord to bleed a spoonful or two before it be tied.

The *limbs* are in some cases *fractured* or *dislocated* by the rashness and awkwardness of the practitioner. These accidents, on some rare occasions, unavoidably happen from the situation of the infant; but are most frequently to be at-

tributed to ill-directed attempts to accomplish the delivery.

From whatever cause such disagreeable occurrences originate, they ought never to be concealed from the attendants, but on the contrary the proper means to remedy them should be immediately adopted. Many infants have been rendered lame for life, from the practitioner by whom they were brought into the world having allowed a dislocated or fractured limb to pass unobserved, in order to conceal his own blunder.

Management of the Navel.—The common method of treating the navel is so universally understood, that it requires no particular description in this work. The portion of cord which is left next the belly, drops off within five or six days after birth, and leaves a tenderness that is generally entirely removed in two or three weeks, by the ordinary means which nurses employ. A split raisin applied every morning underneath the singed rag, accelerates greatly this process.

But sometimes, whatever precautions be used, a rawness round the edges, or some degree of ulceration, remains, and proves very difficult of cure. This arises, in some cases, from a small excrescence, not nearly so large as the half of a garden pea, sprouting up from the root of the cord, and, in other instances, from an erysipelatous inflammation. As the most unfortunate consequences have often been occasioned by ne-

glect in such cases, and as a great variety of treatment is necessary under different circumstances, a practitioner should always be consulted.

Excoriations.—From the delicate structure of the skin of infants, *excoriations* readily take place wherever one part of it is in constant contact with another, unless the most careful attention be paid to keep every part dry. The ears, neck, arm-pits, and groins are chiefly liable to be affected in this manner.

When the excoriations are attended to when they first happen, they seldom require any other treatment than being dusted, morning and evening, with prepared tutty, or calamine, or with common ashes, finely powdered. But when a discharge of matter is the consequence of neglected excoriations, a cure can only be obtained by much care and attention, for it is often very difficult to stop these runnings. Some practitioners have objected to such attempts, on the false supposition, that the discharge is a salutary outlet for an overload of the system. These opinions, admirably well calculated to favour the carelessness of nurses, are founded on improper views of the operations of nature.

Many different remedies will be found beneficial in different cases; such as, washing the excoriations daily with brandy and water, or lime water, or a weak solution of sugar of lead, or of white vitriol, and dressing them with spermaceti

ointment, or Turner's cerate, thinly spread on linen.—The solution of white vitriol, described in the Appendix under the title of Astringents for external use, is the best lotion for preventing the progress of these excoriations; for if any part of the skin which appears red or tender, be washed with it evening and morning, the progress towards excoriation may be certainly checked, and, therefore, it should be kept ready for use in every nursery. While the above means for healing excoriated parts are pursued, an open state of the bowels is to be promoted, by the occasional exhibition of any gentle laxative, such as syrup of senna, &c.

There can be no doubt, that in general excoriations are the effects of inattention to cleanliness; but sometimes in gross children no ordinary care can altogether prevent them.

Swelling of the breasts.—Infants, of both sexes, are liable, a few days after birth, to an accumulation of a milky-like fluid in the breasts, which often produces painful swellings and inflammation, and are sometimes relieved by the spontaneous discharge of the fluid.—The uneasy sensations occasioned by these swellings seldom continue above a few days, and generally are removed by bathing the parts with warm milk and water, or rubbing them very gently with warm olive oil, evening and morning, Emollient poultices are rarely necessary; but should be applied when the swelling and inflammation are considerable.

It should be universally known that the very common practice of ignorant persons forcibly squeezing the delicate breasts of a new-born infant, in order to discharge the milk, as it is called, is the most general cause of inflammations in these parts. The consequence of this practice often is supuration and abscess; and hence, besides the hazard of disagreeable marks in the bosoms of girls, the future woman may be prevented from ever fulfilling the duties of nursing. Parents cannot therefore be too careful in watching against this unnatural and improper custom.

Sore eyes.—Infants for a few days or weeks after birth, are subject to sore eyes, which not only render them fretful and uneasy, but also sometimes, if neglected, induce disagreeable blemishes, or even almost total blindness.

This complaint is very often occasioned by the imprudent exposure of the infant to large fires or much light; it is also frequently caused by cold. The mildest species of this disease appears under the form of an increased secretion from the eye-lids, glueing them as it were together.

The cure consists in guarding against exposure to large fires or much light, and to cold, and in bathing the eyes, morning and evening, with a little warm milk and water, and twice or thrice through the day with a very weak solution of sugar of lead, or of the acetite of zinc.

But when the eyes, and their appendages, are so much swelled that the infant cannot open

them, a violent inflammation having taken place, succeeded by the constant discharge of matter, the eye may be completely destroyed if proper assistance be not had recourse to. The treatment, in such cases, must necessarily vary according to circumstances, as the application of a leech to the temple, of a blister behind the ear, and the use of a weak solution of opium in water, and brisk purgatives, are severally necessary. When infants are affected with habitual weakness of the eyes, the cold bath, and frequent exposure in the open air, afford the best means of relief.

SECTION IV.

Ordinary Management of Infants.

It has been calculated upon what may be supposed very conclusive evidence that one-third of the infants born in crowded cities, die under two years of age ; and although a great deduction may be allowed for original and hereditary feebleness of habit, yet it must be conceded, that much of this mortality ought to be attributed to some error in the ordinary management of infants.—All the circumstances relating to cleanliness, to clothing, to food, to air and exercise, and to the regulation of the bowels, should, therefore, be minutely explained to parents, that they

may be enabled to counteract the prejudices of dry nurses, which are much more frequently injurious than has been generally supposed.

Cleanliness.—The first washing should be performed with very great gentleness and caution, by means of warm water, which is preferable to any of the washes often employed. Spirits are highly pernicious; and greasy substances can never be useful, and may perhaps prove hurtful. The neck, arm-pits, and groins, commonly require more attention than any other part, because there is often a thick tenacious slimy scurf on them; and rough rubbing, especially on the latter parts, might be very injurious. Long-continued attempts to bring off every supposed impurity, however gentle, should never be allowed; for what remains will readily yield to the next washing.

The most scrupulous attention to cleanliness in other respects, not only after birth, but during the whole period of infancy, cannot be too strongly inculcated. For the first two or three weeks, the infant should be bathed, morning and evening, in tepid water, and afterwards in cold water. The whole body ought to be washed in the morning, and the lower half at night. Every part should be kept quite dry; and all accidental impurities, as wet clothes, &c. must be removed as soon as discovered.

By a very little attention, infants may be taught to make water and to expel the excre-

ments at stated times ; and therefore, except in cases of disease, the clothes should never be wet nor dirty. A little timber pot may be employed to receive the natural discharge from within a fortnight after birth.

Clothing.—The unnatural tight swathing in which infants were formerly incased, in this empire is now fortunately exploded, though still continued in France ; and long-established custom has in this respect happily yielded to the suggestions of reason and experience. The stricture of bonds and rollers must not only be painful, but hazardous ; for it tends to interrupt the circulation of blood, and thereby to check the growth in some parts, and to give an improper direction to the growing process in other parts.

Speculative reasoning has, however, on this subject sometimes led very ingenious persons to run into an opposite error to that which is now abolished, for the wish to allow the infant all possible freedom of its different limbs and functions has made them suppose those restrictions of dress, suggested by the experience of nurses, to be unnecessary or hurtful. Thus, the disposition which infants have to rub their eyes with their little hands, is very apt to excite inflammation of those tender parts, and the frequent fits of screaming, to which they are so liable, readily occasion rupture at the navel. It is easy by a little attention to prevent those occurrences. A pinafore may be so applied over the shoulders as to give perfect free-

dom to the arms without allowing the fingers to touch the eyes, and a roller may be so adapted to the belly as to guard against any protrusion of the navel.

With these precautions, the clothing of infants should be light and simple, constructed in such a manner that it may be easily and readily applied. Although it must of course be suitably adapted to the climate and season, it is always to be made to afford a considerable degree of warmth, for the young of all living creatures require a certain proportion of heat to promote the progressive growth of their several parts. Tape is to be used as much as possible, instead of pins; and the whole dress ought to be so loose, that the infant shall have free liberty to move and stretch its little limbs, as far as may be consistent with its welfare.

It may seem very unnecessary to advise that the night-clothes ought to be both lighter, and more loosely adapted to the person, than the day-clothes, in order that the heat may not be confined, and that the limbs may not be cramped. But obvious as this precaution so evidently is, it is almost constantly disregarded by nurses, and the consequences are not only interruption to sleep, but also confinement of the blood to the internal parts of the body, by which a foundation is often laid for future disease.

Purging.—Infants when born have a certain quantity of dark-coloured stuff, something like

softened opium, accumulated in their bowels, which if retained beyond a certain time is apt to become so acrimonious as to excite great irritation. It is not wonderful, therefore, that the endeavours of practitioners a hundred years ago were most anxiously directed to the early discharge of this feculent matter, and that various drastic purgatives were employed for that purpose. Considering the extreme delicacy of the infantile frame, it is astonishing that the violent purgative medicines formerly advised, did not prove more frequently fatal.

If the soft sugar dissolved in water, which is commonly in the present day given from time to time immediately after birth, do not in the course of five or six hours produce a free evacuation from the bowels, a solution of manna, or a dose of cold-drawn castor oil, or a suppository made by coiling up a bit of writing paper and besmearing it with lard or butter, or by shaping a piece of yellow soap of the size of a large Dutch quill, ought to be had recourse to. Glysters should be seldom employed; as according to the Author's experience they are most hazardous during the first year or two of life, they ought on no account to be administered without the sanction of a regular practitioner.

Nutrition.—The experience of many ages, as well as the arguments which may be adduced from analogy, have proved, to the conviction of every candid inquirer, that MILK is the most na-

tural and wholesome food for infants. It may be truly affirmed that the attempts which have from time to time been made, to substitute other kinds of food for milk, have furnished many melancholy proofs of the aborrations of the human mind, and have shewn that the powers implanted in the human constitution sometimes overcome even the dangerous effects of inconsiderate prejudice. But the important advantages which result from nursing, both to the mother and to the infant, have been so often explained, and are so generally understood, that they do not require any illustration on this occasion. It has been improperly imagined, that all mothers ought to be nurses. By this opinion, many infants have been destroyed, and a greater number have only lived to regret their existence; the weakness of their frames having made them strangers to the comforts of good health. The luxuries which refinement has introduced in the manner of living, although they do not prevent every woman from being a mother, certainly render many very unfit for the office of a nurse. A delicate woman, involved in the dissipations of high life, and confined to a crowded city, cannot be supposed capable of furnishing milk in due quantity, or of a proper quality. Her infant must either be almost starved, or the deficiencies of his mother's breast must be supplied by unnatural and hurtful food.

Were the bad effects of nursing, where the mother is of a delicate frame, and addicted to the

habits of the higher ranks of society, limited to the infant alone, they might be counteracted by the employment of an assistant, who should give suck during the night, and also occasionally throughout the day, a plan which is sometimes found to be most useful. But there can be no doubt that in many individuals, even where apparently there is no extraordinary delicacy of constitution, great debility both of body and mind is occasioned by the drain, as it may be truly termed, of the milk. Emaciation, morning sweatings, excessive thirst, inability to take exercise, and depression of spirits, eventually terminating in true melancholy, not unfrequently are the consequences of attempts at nursing.

It must appear so inconsistent with the usual laws of nature, that mothers should be incapable of nursing their own offspring, that those who have not had an opportunity of witnessing the facts by which alone this question can be determined, may be readily excused for their incredulity. How many strong arguments, for example, might be adduced in favour of mothers nursing their infants. Instinct which, in the brute creation, is the unerring guide, prompts all our domestic animals to suckle their young. Again, if a woman can nourish the infant for the first nine months after its conception, she ought surely to be able to continue its nourishment for a few months longer, and her milk ought to be better adapted to the constitution of the infant than that

of a stranger, which might communicate various disorders.

Such arguments, together with others founded on appeals to the moral and religious sympathies of parents, have furnished the materials for the popular declamations on this subject, and these have made such an impression upon the public mind in Great Britain at least, that it requires some fortitude to resist the prejudice.—In this instance, however, as in every other, common sense should dictate what ought to be done in every individual case. Delicate unhealthy women ought never to attempt suckling their infants, unless from their youth, or extreme delicacy, a quick succession of child-bearing might prove injurious, in which case a healthy assistant is to be provided, on whom the whole drudgery of nursing should devolve.

It was formerly imagined that milk from two different women was hurtful to the constitution of the infant; and yet all analogy militated against such an opinion. The Author can with confidence assert, from not a little experience, that there never was a more ill-founded prejudice. Some of the healthiest young people, of whom he has had charge, were reared in this way, and he never saw the most trifling indisposition in consequence of this plan.

When those in the better ranks are qualified to suckle their own infants, it must be quite obvious that they ought to dedicate their whole at-

tention to the task they have undertaken, and that they should so regulate their employments, their diet, their exercise, and the hours dedicated to rest, as to promote their own health, and at the same time to secure a regular supply of food to the infant. If they cannot make those sacrifices, they ought not to attempt a duty of such importance.

Cautions to be observed while Nursing.—Although those infants are most healthy and thriving who are least restricted, and who are permitted to take the breast at pleasure; yet the woman should avoid becoming the slave of her infant. On this account, it ought never to be allowed to sleep at the breast, nor accustomed to overload the stomach by sucking till vomiting ensues. A disposition to regularity in the periods of sucking will soon be observed, and ought to be encouraged.

It should always be remembered, that the mode of life most conducive to health will afford the best milk, and the most plentiful supply; and therefore nurses ought never to eat at irregular times, nor in a quantity which the appetite does not demand; and they should guard equally against indulgence in quantities of diluting liquors, such as small beer, porter, ale, gruel, &c. Fatigue, indolence, or inactivity, and every irregularity, must be also avoided.

With the view of introducing a change of diet by degrees, the practice of early beginning to

give the infant daily a little pap or panada, appears to be rational; for when it is neglected till the time of weaning approaches, the habit is with difficulty established; and there is great hazard that the sudden change may prove injurious. From ten days to a fortnight after birth, is however the earliest period at which the use of spoon-meat is to be begun. At first, food should be given only once a-day; by degrees it may be increased to two meals; and before weaning, three at least ought to be allowed.

If bad effects follow the use of such apparently harmless materials as bread and water, what must be the consequence of the pernicious custom of giving infants spirits in the form of toddy, with the supposed view of preventing gripes? Such liquors, however diluted, applied to their tender digestive organs, must unavoidably destroy or impair their functions, and cannot fail to lay the foundation for a train of the most dangerous complaints. It may indeed be urged in favour of this horrid unnatural practice, that many infants are accustomed to weak toddy from a few days after birth, and that they continue to thrive uninterruptedly. But such arguments only tend to prove, that the vigour of constitution in these individuals is so great as to resist the usual effects of strong liquors.

Although panada or pap be now almost universally used for the first food of infants, as a substitute for the mother's milk, yet, in cases of

great delicacy of constitution, some more suitable meat may be given with more advantage, such as asses milk, or cow milk mixed with a little water and sugar, to which a small proportion of rusk biscuit may be added. The arrow-root, or patent sago, prepared with water and milk, is an excellent food for infants; and after two or three months, weak beef or chicken tea may be occasionally given.

Air, Exercise, &c.—If grown persons, who have been many years accustomed to impure air, often feel themselves sick in a crowded room, it must be very evident, that a much less degree of bad air will affect infants, whose lungs are weak and irritable. But the infant, where the parents are of the better ranks, ought not, for the first month, to be exposed to the open air, unless the weather be uncommonly fine, as its tender lungs may be thereby irreparably injured.

When he has acquired so much strength as to be able to withstand exposure in the open air, he should be carried out every good day, at the time the sun has most influence. At first he ought only to be kept without doors for a very short time; and the person who has charge of him should walk slowly and gently, and avoid standing, especially in a current of air. By degrees, he may be sent abroad twice a-day, when the weather is favourable, and may be kept out gradually for a longer space of time.

The importance of pure air to infants cannot

be better illustrated, than by comparing the health of those who are nursed in great towns with that of those reared in the country. “ In the year 1767, in consequence of the humane suggestion of Mr. Jonas Hanway, an act of parliament was passed, obliging the parish-officers of London and Westminster to send their infant poor to be nursed in the country, at proper distances from town. Before this benevolent measure took place, not above *one in twenty-four* of the poor children received into the work-houses lived to be a year old ; so that, out of two thousand eight hundred, the average annual number admitted, two thousand six hundred and ninety died ; whereas since this measure was adopted, only four hundred and fifty out of the whole number die ; and the greatest part of those deaths happen during the three weeks that the children are kept in the work-houses.” *

Although certainly other circumstances besides impure air, such as carelessness, &c. must have contributed to this dreadful mortality ; yet the superiority of the country air over that of large cities is clearly proved by this fact, and may be confirmed by the meagre looks, sallow complexion, and feeble limbs, of infants reared in town, even where the greatest attention has been paid.

* Examination of Dr. Price's Essay on Population, by the Reverend John Howlett, A. B.

On the proper exercise of infants, more depends than superficial observers could imagine ; for by inattention to this circumstance, a foundation is often laid for deformities that may destroy the beautiful symmetry bestowed on the human body by the Author of nature, and may injure the health, and also, for diseases which, though their first approaches be slow and gradual, may terminate suddenly in a fatal manner.

During the first week or two after birth, the infant sleeps naturally more than two-thirds of his time ; and therefore the fatigue which he undergoes, from being washed, dressed, &c. morning and evening, and occasionally raised to be cleaned during the day and night, may be considered as sufficient exercise at that period.

The remarkable delicacy of infants, and the gristly state of their bones, would render any violent agitation of the body for the first weeks highly dangerous ; but in proportion as the infant advances in age, the bones become gradually more complete, and the other solid parts more firm : hence a gentle degree of motion, by promoting the free circulation of the fluids, will be highly beneficial.

Every restriction to one particular position, in whatever situation the infant may be, ought to be constantly guarded against ; for as the softness of the bones renders them easily moulded into an improper shape, deformities which may destroy the health, or prove the source of much future

distress, will, if this caution be not observed, be readily induced. An infant should not therefore be laid always on the same side, nor carried constantly on the same arm.

The use of cradles is not now so universal as formerly ; and it is to be hoped will not again become fashionable. Nature never intended that infants should have exercise during sleep after they have breathed : therefore the idea, that rocking in a cradle resembles the motion to which infants have been accustomed when in the womb, is an erroneous one. The young of other animated beings sleep quietly and profoundly for a great part of their time without any rocking, although they also were habituated to a gentle waving motion before birth.

It has been urged, that objections to the employment of cradles, deduced from the abuses which may attend this practice, are inadmissible. But certainly no prudent person would recommend any unnecessary expedient which may, through inattention, be improperly used.

Infants, for these reasons, ought to sleep in bed from the time of birth, although some inconveniences, and even dangers, attend this custom ; for it may often perhaps be inconvenient for the mother to carry her infant to the bed-chamber every time he falls asleep ; and during the night, if the woman have been unaccustomed to sleep with a child, she may readily overlay it.

Every inconvenience and danger may be avoid-

ed by adopting a very simple expedient. A crib or cradle may be so constructed, as to be fixed to the side of the bed, during the night, and to be easily moved from one room to another during the day. It must not be made to rock. But in cold weather, the infant ought never to be allowed to sleep by itself, as heat is absolutely necessary.

Weaning—forms an important æra in the life of an infant, as on the proper regulation of this great revolution in his mode of living his future health often depends.

Although in different countries different practices with respect to weaning be adopted; yet, it is a rule too obviously proper to require any illustration, never to deprive an infant of the breast if he do not thrive, unless his indisposition seem to originate from the milk. This, indeed, is not an uncommon occurrence; for when women give suck too long, a natural change takes place in their system, which deprives the milk of its nourishing qualities.

The time of weaning must be influenced by a variety of circumstances besides the health of the infant, as, season of the year, constitution of the parents, period of teething, &c. The winter, for obvious reasons, is a very improper time for this purpose. When the parents have a scrofulous habit, the infant should be nursed by a healthy country woman, and he ought not to be weaned till at least eighteen months old. If the nurse be-

come unfit for her duty before that time, another should be procured. With these exceptions, infants may in general be weaned at any time between nine and twelve months after birth. Too early and too late weaning should be equally guarded against.

Many errors are daily committed in the method of weaning. Some women deprive the infant of the breast at once ; and others, by the application of mustard, or any nauseous substance, to the nipples, endeavour to make him desert the breast of his own accord.

Both practices are equally cruel and improper. A change in diet should be introduced by slow degrees ; and therefore, for some weeks previous to weaning, the infant ought to receive an increased quantity of spoon-meat, and should be allowed a smaller proportion of milk. But, unless the latter precaution be attended to, the former practice is not to be adopted.

What is called the *weaning-brash* is a violent bowel complaint, occasioned by a diseased action of the digestive organs, which is the natural consequence of a sudden change of diet. This may be easily understood, and yet it has been little attended to. If a grown person, whose stomach and bowels are so much more vigorous than those of an infant, were to be all at once forced to live upon Cheshire cheese, it can hardly be doubted, that his health would soon suffer in an alarming degree.

When an infant is weaned, it was formerly the custom to give doses of laudanum, or syrup of poppies, (which has the same effects), every night for a considerable time, with the plausible view of obviating restlessness. But such medicines are seldom safe or proper. Where restlessness occurs, the infant ought to be taken out of bed, and carried about an airy room.—The indiscriminate use of laxatives is also a prevalent custom among women, and cannot be condemned in strong enough terms. If the bowels be not sufficiently open, laxatives must be had recourse to; but, otherwise, they may do harm.

The infant should be accustomed, when weaned, to receive food or drink at stated periods, and not according to the caprice of nurses. Although this task will at first be somewhat difficult, it can always be accomplished by perseverance; and the benefits which the infant himself, and his attendants derive from this circumstance, will more than compensate for the trouble attending the attempt. As little drink or food ought to be given during the night as possible; for a bad habit may be induced, which may lay the foundation for many future complaints. The impropriety of indulging infants with spirits and water, has already been explained.

After weaning, the food of infants should consist of weak beef-tea, panada, light pudding, and the various preparations of milk. Rusk biscuit ought generally to be used instead of ordinary

bread. The common preparation of oat-meal (called pottage or porridge), till within these few years much used in this part of Great Britain, is in general too difficult of digestion for infants, unless a proportion of barley-meal be mixed with the oat-meal.—Frequent exposure in the open air when the weather is favourable, and an increased degree of exercise, are highly beneficial to newly weaned infants.

SECTION V.

Affections of the Skin, accompanied with Fever.

ERYSIPELATOUS inflammation sometimes occurs within a few days after birth. It most commonly first appears on the toes or fingers, which look swelled and blueish as if from cold; but sometimes it begins at the belly, or about the shoulder or neck, or at the inside of one or both thighs. When neglected, it spreads extensively, so that, in many instances, it affects in succession every part of the surface. Suppuration or gangrene are occasionally the consequences, and even where neither of these events take place, death may happen from an effusion into some of the cavities. The most alarming form of the disease is met with in hospital practice.

This disorder is to be distinguished from other affections by the hardness and uniform increased

thickening of the inflamed skin. To an experienced practitioner, too, the colour of the affected part furnishes a pretty certain mark of discrimination.

The treatment must be varied according to the degree and the stage of the inflammation. In every instance, repellents, such as preparations of goulard, &c. are most injurious. Even emolient poultices often render the case strictly desperate. If there be any difficulty in ascertaining the true nature of the inflammation, no harm whatever can accrue from dusting with hair powder or fine flour, and in erysipelas, it is at first the only application which can be useful.—The bowels are to be kept very open; the flow of the urine, if at all scanty, (which is not an unfrequent occurrence), is to be promoted, and the strength is to be supported by cordials as well as nourishment; and where these fail, bark in the form of a lavement ought to be exhibited every three or four hours while necessary.—In some cases powerfully stimulant dressings to the affected parts are required, and in other cases blisters upon the chest or back, or other parts remote from the seat of the disease must be had recourse to.

Another affection of the skin, attended with fever, has been called by Dr. Underwood, who first publicly described it, the *skin-bound disease*. It occurs chiefly in hospitals and among the lower classes of society, though it has in some rare instances been observed in every rank. It

does not happen invariably as in the former disease, within a short time after birth, for it has been known to attack infants above six months old.

This disease is ushered in with violent fever, coldness of the limbs, oppressed breathing, and almost constant moaning. The general colour of the surface of the body is yellowish, but some parts of the skin are purple, and not only thickened and hardened, but also so evidently unyielding, that they seem to be strongly glued to the subjacent parts. The neck, shoulders, and back, most commonly form the seat of this affection. This peculiar appearance and condition of some parts of the skin, with the yellowish hue of the rest of it, together with the violence of the fever and the state of the stools, which are of the colour and consistence of clay, enable a practitioner to distinguish this disease from erysipelas and from every other disorder.

There is some reason to believe that the cause of the *skin-bound disease* is some altered condition of the liver, and in confirmation of this it may be stated, that in one very remarkable case which the Author attended several years ago, where the patient was six months old, the only morbid appearances discovered after death were an unusual accumulation of blood within the head, and such a change in the texture of the liver, that it looked as if it had been boiled.

For the cure of this complaint, the warm bath,

powerful laxatives, cordials, and blisters, have been recommended, but they have seldom proved successful, and it is to be feared that human means can avail very little wherever its progress is not arrested in the beginning.

SECTION VI.

Affections of the Skin unnattended with Fever.

Copper-coloured blotches, of the size of a six-penny or shilling piece, on the buttocks or soles of the feet, occurring within from a week to a fortnight after birth, indicate a diseased state of the infant's habit, which requires the most serious attention. If they be neglected, ulcerations of the palate, throat, and nostrils, follow ; the nurse's nipples, armpits, and throat, become infected ; and if the infant (which is not common) survive for any length of time, the arms and legs are covered with an ugly scab, which keeps up a constant degree of irritation.

The only cure for this affection is mercury, which ought to be exhibited, both to the nurse, in such quantity as to affect her milk, and also to the infant, in doses adapted to its strength, and to the virulence of the disease.

Infants are much subject to an eruption called the *gum*, which appears in a variety of forms, both in different cases, and in the same individual

at different times. The best description of these varieties is that given by Dr. Willan.*—In a work of this kind, it would be improper to dwell minutely on this subject, more especially as the several varieties require almost a similar treatment.

The most common of the five species into which the disease is divided by Dr. Willan, is the *red gum*, which usually appears a short time after birth, and occasionally recurs till all the milk teeth are cut. It is generally in the form of a great many small distinct red slightly elevated spots which can be felt above the skin; it is often general over the whole body, like the measles; in other cases, it appears only on the face, or extremities, and is frequently confined within large patches. The skin in many instances is of a vivid red colour in the interval between the spots. The infant does not seem to suffer any uneasiness, or derangement in his usual functions, from this eruption; a circumstance that sufficiently distinguishes it from the measles.

One variety of this disease, the spots being transparent or of a yellowish or pearly colour, resembles so much the itch, that the principal mark by which it can be distinguished from that disease, is, the ordinary attendants not being affected with

* See Dr. Willan's Work on Cutaneous Diseases, Order 1.

a similar eruption, though the nurse herself sometimes is.

The only danger to be dreaded from the red gum, is its sudden repulsion, which is immediately followed by violent affections of the bowels, attended with screamings, and even in some cases with fits.

A determination of blood to the papillæ of the skin seems to be the chief cause of all the varieties of gum, but the circumstances occasioning this have not yet been ascertained. It can scarcely be doubted, that the structure of an infant's skin is such as to admit readily, whenever the blood is disproportionate to the wants of the system, of a deposition of the superfluous parts on the skin.

In the management of this eruption the chief object ought to be, to guard against its repulsion, for which purpose the bowels are to be kept moderately loose, the skin is to be frequently washed with milk-warm water, and exposure to cold is to be particularly avoided. The nurse's diet too is to be properly regulated. Should the eruption by any accident recede, the warm bath, and in some cases an emetic, cordials, and even blisters, must be had recourse to.

Milk blotches.—A white or dusky scabby eruption, principally affecting the brow, or some part of the head or face, in many cases appearing in different distinct patches, in others spreading con-

siderably in one continued crust, is termed by nurses milk blotches.

These scabs are always superficial ; consequently never leave any scar, unless they be improperly treated. They are attended with no fever, nor obvious derangement of the system, although they often continue for weeks or months. Eruptions of this kind generally only occur in gross infants, and seem to proceed from too rich milk.—The cure, therefore, commonly depends on the abstinence of the nurse from much animal food, and from all fermented liquors.

The anxiety which parents and nurses often express to have those ugly appearances removed, has often induced practitioners to interfere unnecessarily and improperly. It should always be remembered, that such eruptions are frequently critical and salutary ; and therefore, when from excessive itching it becomes expedient to apply to them a weak solution of sugar of lead, or, what is preferable, the weak astringent lotion formed by a solution of white vitriol, gentle laxatives are to be premised. Every active medicine, as large doses of calomel, waters impregnated with sulphur, &c. ought, if possible, to be avoided.

An eruption, very similar to the above, occasionally takes place during teething, and is a most obstinate and troublesome complaint, rendering the infant extremely restless, from the heat, itching, and irritation which attends it. Besides the period of attack, there are other circumstances

which distinguish this eruption from the former, viz. there being a redness of the skin round the edge of the incrustations; an ichorous or clear-coloured exudation which concretes, issuing from the surface of the scabs; and the disease having a tendency to spread over every part of the face which is touched with that exudation.

The ordinary unctuous applications generally aggravate this affection. The best remedies therefore are brisk laxatives, sometimes preparations of sulphur or antimony, and a wash composed of linseed oil and lime water, or of one part of the acetite of ammonia to four parts of spring water. With either of these, the scabs may be washed evening and morning. Calomel has been very often employed in this disease, but it has never seemed to have much effect.

SECTION VII.

Yellow Gum.

THIS disease commonly takes place within a few days after birth. It is preceded by drowsiness and disinclination to suck, and is soon discovered by the universal yellowness of the skin. Sometimes the whites of the eyes appear yellow for a day or two before the other symptoms. The tinge of the skin is seldom deep, and the

oppression and torpor abate, on the infant being well purged ; so that at the distance of a week from the attack, all the indisposition subsides. But cases are occasionally met with, where the colour of the skin is of a dark yellow, the infant moans constantly, and convulsions follow, which at last destroy life.

The causes of this disease are numerous. As the bile is conveyed from the liver and gall-bladder, by a single conduit, into the intestinal canal a little below the stomach, any obstacle which may prevent its passage in this manner, must induce a yellowness of the skin. In grown people the liver is pretty well defended from external injuries ; but in infants, it is larger in proportion, and not so well protected. In these also the intestinal canal is more readily deranged than afterwards ; hence the flow of bile may be interrupted by external pressure on the liver, by distention of that portion of the intestine into which the bile passes, or by any of the causes that occasion the same accident in grown persons. It has been alleged, that this complaint is sometimes occasioned by the nurse's milk ; but the evidences of this are not quite satisfactory.

In regard to the treatment of this disease, if the infant seem to suffer no uneasiness, although his skin be quite yellow, all that is required is to keep his bowels well cleared. But if he be unable to suck, and have a disposition to constant sleep, the most active means should be adopted. Ipeca-

cuan vomits, and brisk laxatives, as a dose of jalap, or syrup of senna, or cold-drawn castor oil followed up by frequent doses of a solution of manna, will then be found necessary; and their effects may be much promoted by the warm bath. When violent colic pains or convulsions accompany the yellow gum, there is reason to fear that the liver is diseased, and little can be expected from any remedy.

SECTION VIII.

Sore Mouth or Thrush.

THE *thrush* is so common a disease in early infancy, that it has been imagined to be a salutary effort of nature to expel some hurtful matter from the system, which might otherwise be productive of many complaints at a future period. This opinion, however, is merely a vulgar prejudice, founded neither on reason nor experience.

Of this disease there are two varieties: the one, which is by much the more frequent, is merely a local affection of the lining of the mouth; and the other is a feverish disorder of a very dangerous nature.

The former of these appears in the form of small white spots on the corners of the lips, tongue, and inside of the cheeks and throat, re-

sembling little pieces of coagulated milk. These spots gradually spread over the inside of the lips, the tongue, palate, &c. and, in some cases, are continued as far into the throat as can be seen; but, where the complaint is favourable, the surface not covered with these spots is of a healthy colour, whereas in violent degrees of the disease it is of a damask rose or very red hue. In three or four days the spots grow yellow, and soon after drop off, and gradually disappear, leaving the skin on which they have been seated of a bright red colour; so that at the end of a fortnight from the first attack, no vestiges of the disease remain.

In some rare cases the spots become livid, and the infant sinks, although no fever had attended. Instances of this kind are exceedingly rare, but it often happens, that, from mismanagement, the complaint is kept up for several weeks, and gradually exhausts the strength of the infant. This is always the effect of forcing off the spots before they have undergone the natural changes: and as they are quite superficial, any slightly stimulating application, such as Port wine and water, currant jelly dissolved in water, or borax, (which is universally employed by the ignorant in this part of the island), readily does this.

Considerable acrimony of the saliva attends this disease, so that gripes, frequent unnatural stools, excoriation about the extremity of the gut, and tenderness or soreness of the nurse's nipples,

are the usual consequences. The disease appears generally within a few days after birth, and seldom later than the month.

That the too early or too liberal use of spoon-meat is the most frequent cause of this variety of sore mouth can scarcely be doubted, but other causes occasionally produce it, such as exposure to cold, damp weather, and some peculiar states of the atmosphere. The proof of this latter cause is, that in some seasons almost every infant is affected with some degree of sore mouth.

In the treatment of this complaint the great object should be, to promote its natural progress, and to counteract the effects of the acrimony of the saliva. This may be done by putting frequently into the infant's mouth a tea-spoonful of a liquor prepared by mixing with the white of a single unboiled egg, three table-spoonsful of cold water, and a little refined sugar, by prohibiting all spoon-meat, and by frequently dusting the natural passages with prepared calamine or tutty powder. When the spots become yellow, the borax may be allowed. It is to be mixed with eight or ten times its weight of powdered sugar or of honey, or it may be dissolved in fig-tea in the same proportion. If the spots grow livid, bark and Port wine should be used as a gargle, while the infant is supported by means of ten or twelve parts of warm cow milk mixed with one part of sherry wine. The same kind of nourish-

ment is necessary in cases, where, from the extensive incrustation over the tongue and cheeks, the infant is incapable of sucking, which often happens for a day or two. The irritation in the bowels is to be allayed by means of preparations of any of the ordinary absorbents.

The other variety of thrush is preceded by great oppression or feverishness, sometimes by such lowness as to resemble the approach to death, and sometimes even by fits or violent shrieking. When the spots begin to appear on the inside of the lips, on the tongue, &c. those symptoms become mitigated, but do not entirely subside; for the infant generally continues feverish, and incapable of sucking, till the spots begin to drop off. Great irritation of the bowels attends this affection, insomuch that it has been alleged, on apparently just grounds, that sometimes the spots are continued, at least along the course of the gullet down as far as the stomach.—From the frequent pain in the belly, aggravated by the slightest pressure, it has even been supposed that they extend further.

In every instance, the event of this disease is to be considered as precarious. If the oppression do not go off upon the appearance of the spots, or if the spots become livid when they should grow yellow, there is little chance of recovery. But even where these obvious marks of danger do not take place, there is always risk of the weakness and irritation proving fatal. Till the infant

can again suck, there can be no dependence on his recovery.

This variety of thrush is induced by specific contagion. Like the former, it most ordinarily happens within the month after birth, though exceptions to this more general law now and then occur.

The utmost activity of practice is necessary in the treatment of this dangerous disease. The absorbent medicines, such as magnesia and prepared chalk, on which many foreign practitioners place the chief reliance for the cure, do no more than moderate the irritation in the stomach and bowels. On this account they are indeed proper auxiliaries, but the great indication to be kept in view, is to support the strength of the infant. For this purpose wine mixed with milk, in the proportion already mentioned, and sweetened so as to be palatable, should be freely and frequently given; and one drachm of bark with three drops of laudanum, made into a lavement, by means of two table-spoonsful of thin starch, ought to be exhibited every three or four hours, till the spots begin to drop off, and the infant again become capable of sucking. During the course of the disease, a clean dress should be put on every twelve hours, and the whole surface ought, at the same time, to be carefully washed with warm water. The mouth is to be treated as in the former variety.

If, notwithstanding these means, the strength

decline, and the healthy change on the spots do not appear, powerful cordials, with external stimulants, become necessary.

SECTION IX.

Sickness and Vomiting.

To one who has never witnessed the state of an infant while labouring under sickness at stomach, it is hardly possible to communicate an adequate notion of the alarming appearances which it induces. There is not only a remarkable change of countenance, a general relaxation of all the limbs, a great degree of torpor and lowness, but also an oppression of the breathing, that may be readily mistaken for the approach to death.—The suddenness of the attack, the smell of the breath, the colour of the face round the lips, the dulness of the eyes, and the total incapability of sucking or of swallowing, are the most obvious evidences of this affection. If there be slight efforts to retch, no one could mistake the case, but it sometimes requires a good deal of attention to discover those efforts, for the infant always resists them as long as possible.

The causes of sickness at stomach in infants are either some altered condition of the nurse's milk, or the presence of some indigestible substance in the stomach. If the nurse have been under the

influence of any violent emotion of the mind, or if she have begun to be out of order, or even to have the feelings preceding that event, it may with certainty be concluded that there is some morbid change in the milk. During the process of teething, the increased quantity of saliva, together with its acrimony, proves occasionally the cause of sickness.

In such cases an emetic is immediately to be given. With this view, preparations of ipecacuan are in general the only medicines to be employed. Antimonials, in doses which excite vomiting, are always injurious, for they sometimes actually exhaust, with great rapidity, the living powers. In many instances, the infant has remained in a torpid lifeless state for twelve or fourteen hours after an ordinary dose of emetic tartar, and, as far as could be judged, nothing but the most powerful cordials and external stimulants could have prevented the fatal event. The ipecacuan, therefore, either in the form of powder, mixed with a little sugar and water, or of ipecacuan wine, is the safe and efficacious medicine. For the first month after birth the powder is to be used; the dose should be from three to five grains; after that age, the ipecacuan wine, being more readily swallowed, is the preferable form.

Vomiting is a very common occurrence in infants, as their stomach is so irritable that it readily rejects any overload, or any indigestible substance. Unless when it is extremely violent or

long-continued, it is seldom necessary to interfere ; but when means are required to moderate or to allay it, they must be adapted to the cause of vomiting. If it seem to arise from the presence of something in the stomach which ought to be thrown off, there can be no doubt of the propriety of an emetic. When it is kept up by the irritation of the stomach, which is sometimes the consequence of its actions having been disturbed by a cause already removed, cordials, and failing these, stimulants applied externally, ought to be recommended. The great difficulty is to distinguish the cases in which the one or the other practice ought to be adopted. When the vomiting recurs frequently without any apparent cause some serious organic affection may be dreaded.

The habitual vomiting from over-distention of the stomach, to which many infants are liable, may lay the foundation for future weakness of the digestive organs, and should therefore be guarded against by every precaution. For this reason, infants ought not to be permitted to suck too much at a time ; and large quantities of spoon-meat should never be given in the early months. The intention of spoon-meat at that period is not to appease hunger, but to accustom the infant to a gradual change of diet. A small proportion only, therefore, ought to be allowed, till towards the period of weaning ; and although it must necessarily be given when the infant is hungry, to

induce him to take it, his appetite should never be completely satiated.

SECTION X.

Colic Pains and Introsusception.

IF an infant be fretful by fits, if its upper lip look bluish or livid, if it writhe or contort its body, and draw up its limbs towards its stomach, and, more especially, if it occasionally pass wind, which seems to afford relief, there is good reason to suppose it affected with *colic*. The lesser degrees of this complaint are of temporary duration, and are so well understood by the ordinary attendants, that a medical practitioner is seldom consulted for any other purpose than that of preventing its frequent recurrence. But the more violent degrees of colic assume an appearance which seldom fails to occasion much anxiety and alarm. Excessive and long-continued shrieking, great fever, indicated by the heat of the skin and flushing of the face, oppressed breathing during the intervals of the screamings, and the evidence of pain being occasioned by the slightest pressure on the belly, are the ordinary symptoms in such cases.

Such is the delicacy of the bowels of infants that they are apt to be affected by the most apparently trifling causes ; and hence many circum-

stances induce colic pains. Exposure to cold, inattention to changing the clothes when they become wet, too great a quantity of spoon-meat, some fault in the milk, too large doses of magnesia, and a collection of acid slime or of air in the stomach or bowels, may severally be productive of this complaint.

Of those causes the two latter only require elucidation. As magnesia has little taste, it has been supposed incapable of occasioning any irritation. But its laxative effect depends on its undergoing a change in the stomach or bowels, which gives it the same properties as the laxative salts; and, it is obvious, that if too large a dose of these occasion colic pains in grown persons, the magnesia must, when given in too great quantity, produce the same effects in infants.

The internal surface of the stomach and alimentary canal is constantly lubricated with slimy fluids, which defend it from injuries, and when in due quantity assist in the digestion of the food.—But when the proportion of those lubricating fluids is too great, the food is prevented from undergoing the healthy changes, and indigestion with all its consequences must follow.—Nothing contributes more to increase the quantity of slimy fluids than too much sugar in the food of infants.—A little of that substance is proper and necessary, but it ought never to render the spoon-meat what can be termed sweet. Inat-

tention to this is one of the most common causes of green-coloured sour-smelling stools.

In slight degrees of colic, a few drops of Dalby's carminative, mixed with sugar and water, and a dose of cold-drawn castor oil, if the bowels be at all confined, are all that are necessary.— The practice of giving spirits and water to infants, which was formerly so prevalent, cannot be reprobated in sufficiently strong terms. It consists with the knowledge of the Author of these observations, that in the lower ranks many infants are annually destroyed in this city, by this most unnatural practice; and from what he has seen, he takes the liberty to warn parents in the higher walks of society, that dry nurses very often have recourse to this method for quieting infants, for their own selfish purposes.

The best method of preventing slight degrees of colic, is to take care that the infant do not suck too much at a time; to promote the discharge of any air that may be swallowed while sucking, by gently tossing the baby now and then before his stomach be filled; to proportion the quantity of spoon-meat to the powers of digestion; and to regulate the diet of the nurse; as it is now well known, that after certain articles of food, such as particular kinds of malt liquor and of vegetables, a great deal more air than usual is separated during digestion from the milk.

In the more violent degrees of colic, the treatment must be varied according to the circumstances of the individual case. If it seem to arise from accumulated slime, or from some fault in the milk, suitable doses of cold-drawn castor oil, or magnesia and rhubarb, together with the warm bath or fomentations of the belly, are to be advised. But if the bowels be quite open, and the complaint have been evidently excited by exposure to cold, or some external circumstance, along with the latter of those means, opiates, in the form of anodyne balsam, rubbed on the belly, may be safely prescribed. Preparations of opium should almost never be given internally to infants, as they may do, and have done irreparable mischief. The tincture of hyocyamus is a most excellent substitute.

When constipation attends colic, the most active means of opening the bowels are to be had recourse to, provided there be no evidence of any inflammatory affection, for in that case purgatives are highly injurious.—Preparations of aloes, of senna, of castor oil, of the compound extract of colocynth, combined with James's powder, together with the most powerful glysters, are to be employed according to circumstances.

A very dangerous disease, called by surgeons *introsusception*, resembles colic so much, that it sometimes requires great practical discernment to draw the line of distinction between the two diseases. If, along with the ordinary symptoms

of very violent colic, the pulse be unnaturally slow, or if there be urgent calls to void the stools, and nothing but slime, or slime tinged with blood, be passed, there is much reason to dread the existence of this disease.

It consists of the passage or invagination of one portion of the gut into another, just like a pocket telescope, when its several pieces are included in each other, together with a stricture and consequent inflammation in the introsuscepted portion. Sometimes these are such as to close the canal, but in other cases there remains a free passage through the gut.—Introsusception is occasioned by some violent irritation of a part of the gut, and this is excited by exposure to cold, by worms, and by drastic purgatives.

When this disease is discovered at the beginning, it often yields to the use of leeches, warm fomentations, and a dose of some powerful opening medicine. But if its nature be overlooked or misunderstood, even for a few hours, the fatal event can hardly be prevented. A discharge of blood from the bowels, but more often stupor and occasional convulsions, precede death.

SECTION XI.

Costiveness.

SOME infants seem habitually *costive* ; and certainly there is, in respect to the state of the bowels, a considerable variety in different individuals. But what may be properly termed costiveness, is never to be regarded as a natural deviation peculiar to any infant. It is always the effect of disease, or of the nurse's milk, or of the food. If one copious evacuation take place every twenty-four hours, and the infant be thriving, there is no occasion for interference. If there be any greater torpor of the bowels than this, suitable remedies are to be employed.

It is generally proper to treat the case at first as if it were the consequence of disease ; and on this account, a brisk laxative medicine is to be given every day for four or five times successively. The best laxatives for infants are, manna, calcined magnesia, jalap, cold-drawn castor oil, and a laxative syrup, prepared in the following manner : Take one ounce of senna leaves, and after having with great care picked out every bit of stalk, pour upon the leaves one English pint of boiling water ; let this boil till one half remains, then pour the whole into a porcelain bason, and, covering it up, lay it aside for twenty-four hours. Strain it off through a linen rag, and, adding four

ounces of treacle, put it over a fire till it become so much heated that the treacle and the decoction may be thoroughly united. When cold, it is to be corked up for use, and should be kept in a cool place, otherwise it may ferment. The dose of this syrup is from a tea to a table-spoonful, according to the age and constitution of the infant. Its activity may be increased to any necessary degree, by the addition of powdered jalap.

Where these means fail, there is reason to attribute the costiveness to the nurse's milk. Of this cause, in many instances, the most incontrovertible proofs have appeared; and, however unnatural it may seem, there can be no doubt that the mother's milk occasionally has this effect. Sometimes that peculiar state of the milk may be altered by regulating the diet, and opening freely the bowels of the nurse. While proper means are tried for this purpose, the infant's bowels are to be kept clear by any mild laxative. But if it be found that the milk still possesses that injurious quality, the nurse should, if possible, be changed. Where this cannot be done, four or five drops of antimonial wine may be given to the infant every night at bed-time, and instead of the ordinary food, panada, made with small beer and treacle, should be substituted.

Temporary costiveness may be at any time removed by a suppository made of a small piece of yellow soap, shaped like a very large Dutch writ-

ing quill. This may be rendered more powerful, if necessary, by being dipt, previous to use, into some powdered sea-salt. Suppositories are more efficacious in infants, and much more easily managed than glysters, though these latter means are also sometimes useful.

In cases of obstinate constipation, attended with symptoms of great oppression, aloes, suspended in treacle or syrup, is more powerful than any other laxative ; from four to eight grains may be thus given as a dose. Many practitioners err, by directing too small doses of laxative medicines for infants.

SECTION XII.

Looseness.

THE natural appearance of the stools of infants, while on the breast, ought to be familiar to every practitioner. In general, the colour is that of bright orange, the consistence is pulpy and curdled, and the smell is not offensive. Any deviation, in those respects, marks some diseased state of the stomach or bowels. During infancy, from two to four evacuations, within the twenty-four hours, seem necessary and useful ; and even where that number is exceeded, it is not to be regarded as injurious, unless the health be impaired, or the flesh be rendered flabby.

In cases of looseness, the appearance of the stools is very various ; for they are of a light-green colour, or slimy, or bloody, or dark-coloured and watery, or light clay coloured, or of a dark green like chopped spinage, or purulent, or they consist of the food totally unchanged. When they are light green, and at the same time emit a sour smell, the infant is said to have the green scour.— This complaint is attended with griping and fretfulness, but is not dangerous. It commonly yields to a brisk laxative, as a dose of rhubarb and magnesia, or of syrup of senna with a small proportion of rhubarb, followed by small doses of magnesia or prepared chalk. The nurse's diet should be regulated, and the infant ought to have no other food than arrow-root, besides the milk.

Slimy stools are generally the effect of exposure to cold, though they occasionally arise from some irritation or accumulation in the bowels. In both cases, they are apt to be slightly streaked with blood. If there be violent pain, or symptoms of fever, introsusception is to be dreaded. A dose of cold-drawn castor oil, together with the warm bath, or fomentation of the belly with flannels wrung out of hot water, are the most proper remedies, if the disease be attended to at the beginning. If there be reason to suppose the stomach loaded with acrid saliva, an emetic should be premised.

Dark-coloured liquid stools like moss-water,

called in England the watery gripes, very rapidly occasion emaciation and prostration of strength, and require very serious attention. This variety of looseness often attends teething, and is also not unfrequently occasioned by depraved quality of the nurse's milk, or by some error in the ordinary management of the infant. The means of cure must be varied according to the causes ; but, in general, an ipecacuan vomit, one or more doses of some mild laxative, with an opiate glyster at bed-time for three or four times, attention to the state of the teeth, warm clothing, a change of milk if the infant be still on the breast, and if otherwise, a due regulation of the diet, are the chief means which are found useful.

The discharge of clay-coloured stools, as if powdered chalk were mixed with them, having a most offensive smell, may be included under this head, although the stools be rather consistent than loose, because they are passed in great quantity relatively to the food taken in, and because they very quickly reduce the flesh and strength.— This variety is a very dangerous one, and if it do not yield, in the course of a few days, to the use of alteratives, with opiate friction, occasional purgatives, and a suitable regulation of the diet, it eventually proves fatal.

Dark-green coloured stools, like chopped spinage, most commonly are passed during the progress of some acute disease, and always indicate great danger, unless on some rare occasions when

they prove critical.—This species of looseness requires a still greater variety of treatment than the former, because it is often dependent on, or complicated with affections of other parts.—Preparations of rhubarb and aloes, with occasional opiate glysters, are, in most cases, useful remedies.

Purulent matter is occasionally observed in the stools in some cases of protracted looseness, and in most instances the infant suffers unusual pain in passing such stools.—In a great proportion of cases of this kind, little benefit accrues from medicine, but now and then large doses of a solution of gumarabic mixed with milk, opiate glysters, and small doses of the cold-drawn castor oil, have been found efficacious.

When the food passes unchanged through the bowels, it indicates great weakness of the habit, and may be generally regarded as the harbinger of death.—But in some particular constitutions, exposure to cold, or the irritation of teething, or the weakness which follows febrile complaints, occasion this state of the stools. Such cases are distinguished from the former, principally by the state of the general health, and are to be regarded as arising chiefly from some temporary weakness of the alimentary canal. The obvious remedies for those latter cases are, medicines calculated to stimulate the various parts concerned in digestion, with suitable diet.

In the above enumeration, the chief varieties of looseness have been noticed, but complications

occasionally occur, and sometimes one variety is succeeded by another. It may be proper, therefore, to add some observations on the symptoms which indicate danger, on the most ordinary causes, and on the general mode of treatment of such affections of the bowels.

1. *Symptoms of danger in cases of looseness.*—Constant peevishness of temper, with an altered appearance of the countenance, a kind of uneasiness of breathing, as if there were a slight tendency to cough, dryness of the skin, with such emaciation, that the skin about the thighs seems to hang in folds, swellings of the glands of the groin, and distention or great shrinking of the belly, are always to be regarded as most unfavourable symptoms.—Excessive loathing of food, or great voracity of appetite, are equally dangerous.

2. *Causes of looseness.*—When active treatment at the beginning does not arrest the progress of looseness, there is always reason to dread a diseased state of some of the parts concerned in digestion, such as the liver, or some portion of the intestines, or the mesenteric glands.—But it cannot be doubted that an irregular action of the stomach or bowels sometimes occasions very similar symptoms, and it is extremely difficult in any individual case to distinguish at first the one cause from the other.

3. *General method of treatment in cases of looseness.*—In all doubtful cases, it is, perhaps, the

prudent plan to employ such remedies as are calculated to alter irregular action, and to relieve the distressing symptoms as they arise ; for where the looseness is the effect of some organic disease its cure is beyond human reach.

It is impossible to lay down precise rules applicable to the management of every individual case. —But in general, emetics ought to be first given, and then one or more doses of rhubarb and magnesia, or of cold drawn-castor oil ; and if the complaint still continue, prepared chalk, in suitable doses, and opiate frictions, or according to the violence of the disease, very small doses of calomel, with two or three drops of laudanum with each dose, are to be advised. The occasional exhibition of injections of thin starch and laudanum, in the proportion of ten drops of the latter to two-table-spoonsful of the former, must be had recourse to, in order to moderate the discharge when the strength is much reduced.

Although powerful astringent medicines are commonly inadmissible in cases of purging during infancy, great benefit has sometimes seemed to accrue from the use of a mixture composed of twenty grains of toasted rhubarb, two drachms of prepared chalk, a table-spoonful of brandy, previously set fire to and allowed to burn as long as any spirit remains, and three table-spoonsful of water. The dose is from one to two tea-spoonsful every hour or two, while awake. On some occasions, stimulating embrocations, applied

over the whole belly, have also had considerable efficacy.—Weak beef tea, or chicken broth with rice, or boiled cows milk with baked flour or with arrow-root, should form part of the diet.

SECTION XIII.

Teething.

THE process of *teething* does not commence invariably at the same age; but, in the greater number of cases, the first pair of milk teeth appear before the seventh month, and the last pair before the completion of the second year. Of those teeth there are twenty in all, that is, ten, or five pair, in each jaw. At birth they are placed underneath the gums, and each tooth is inclosed in a fine membrane or capsule, which is supposed to be extremely sensible. This capsule, as well as the gum, must give way before the tooth can be protruded, and this is accomplished merely by the pressure of the enlarging tooth, which occasions the absorption of those parts.

In general, the teeth appear in pairs, and those of the lower jaw are commonly cut before the corresponding ones in the upper. The following is the order of succession in most instances, viz. *first*, the two middle fore teeth; *secondly*, the two next to them; *thirdly*, the anterior grinders;

fourthly, the eye-teeth ; and, *finally*, the posterior grinders. An interval of one, two, or more weeks, is interposed between each successive pair. There is commonly a longer interval between the first two pair than between the succeeding ones.

There is great variety in different individuals in regard to the commencement and progress of dentition. Many infants attain the sixteenth or eighteenth month before a single pair appears, while in some the first pair or two are cut by the end of the third month. Sometimes the several pairs of the upper jaw are protruded before the corresponding ones of the lower jaw. In some rare cases, the grinders come out before the cutting teeth, and the usual order of succession is deranged. It is not uncommon, too, for several pairs to succeed each other very rapidly, and then for a considerable interval to elapse before the rest advance. But, in general, the later the commencement of teething, the shorter are the intervals between the several pairs.

In by far the greater number of instances, the natural process of dentition is productive of pain and indisposition.—Some infants, indeed, suffer less than others, but few enjoy perfect health while teething.

Most commonly the pressure of the teeth on the gums occasions pain and an increased flow of the fluids furnished by the mouth ; hence the infant is fretful, restless during the night, frequently thrusts his little hands, or whatever

he can get hold of, into his mouth to rub his gums, slavers continually, and from the passage of some of the saliva into the stomach and bowels, has occasionally sickness, gripes, and looseness. At last the corner of a tooth is perceived; but the uneasiness still continues for some days, when a second one is cut.—During the interval between the eruption of the lower and upper teeth, he recovers his strength and usual good health; but is soon again subjected to the same uneasiness.

Were these the only complaints which attend teething, little danger might be apprehended; but sometimes many very formidable symptoms occur. In robust healthy constitutions, a violent fever frequently precedes the appearance of every tooth; the gums are swelled and inflamed, the eyes much affected, the belly bound, the skin hot; the sleep is short and disturbed, and there is every now and then most incessant screaming, with inability to suck. Weakly infants, where teething is painful and difficult, are oppressed with sickness, loath all kinds of food, lose their colour, fret perpetually, have a constant looseness, and become quite emaciated. Some, besides these symptoms, are subject to convulsions, or to a spasmodic affection of the windpipe, similar to croup, which sometimes ends in a convulsive fit, and sometimes produces instant suffocation, and which is apt to recur from time to time, till the tooth or teeth are above the gum. Cough, very ugly e-

ruptions on the skin, ulcerations in the gums, extending sometimes over the palate, obstinate inflammation of the eyes, affections of the urinary organs, and sometimes most alarming determination to the head, are occasionally the effects of teething. All the symptoms are much aggravated, if several teeth be cut at once, or in immediate succession.

By a careful examination of the state of the gums, it may be readily ascertained when any of the distressing symptoms thus enumerated arise from dentition. Previous to the protrusion of any tooth, the seam, which may be distinctly observed on the edge of each gum, like a doubling of the skin, is done away, and the upper surface of the gum is rendered flat and broad, or is elevated in the form of a small swelling. The gum of the upper jaw is more apt to seem on the stretch than that of the lower. It is not easy to distinguish when the infant suffers pain from any part of the gum being pressed upon, otherwise that might assist in pointing out the advance of some particular tooth or teeth, because such a degree of fretfulness attends teething, that any attempt to feel the state of the mouth never fails to irritate the baby.

An estimate of the danger attending dentition is to be formed, chiefly from the nature of the symptoms. Experience proves that puny delicate infants often suffer less than the most healthy and robust. In this climate it has been found

that summer is a more favourable season for teething than winter. Some infants cut their fore teeth without any pain or difficulty, but are much distressed while cutting the grinders or eye teeth.—Although, when the protrusion of the first two pairs of fore-teeth is accompanied or preceded by great uneasiness, there is reason to fear that the individual will suffer during the whole period of teething; yet the converse of the proposition does not hold good, that is, where little derangement of health attends the first pair or two, it is not to be concluded that all the other teeth are to advance with the same facility.—It is well known that, during teething, every acute disease is more than usually dangerous; and it is also a well-established fact, that infants, in a crowded city, are more liable to pain and alarming symptoms at that time of life than those reared in the country.

The treatment of the ordinary complaints attending teething should consist in moderating the pain, in regulating the state of the belly, and in the continued employment of every means calculated to promote the general health of the infant. With these views small quantities of anodyne balsam should be rubbed on the back-bone at bedtime, when the infant seems greatly pained. He ought to be fed with beef-tea twice a-day if weakly, and if his bowels be very loose; and should be kept as much as possible in the open air, when the weather is favourable. The cold bath ought

never to be laid aside in these cases, as nothing is more conducive to promote general health. Looseness, if excessive, must be moderated, and if the belly be bound, should be artificially induced by gentle laxative medicines.

When restless during the night he should be taken out of bed and carried about in a cool airy room ; and, if not relieved in a short time, he ought to be put into the warm bath.—Finally, he should be allowed something to rub his gums with, which will both gratify his wishes and tend to promote the absorption of the parts inclosing the tooth. A piece of wax-candle, or of recent liquorice root, is preferable to coral, though that latter substance is in no other respect injurious than that it may be, by awkwardness, forced into the nostril or eye.—A bone or ivory ring answers the purpose admirably.

The management, when alarming symptoms take place, must be varied according to circumstances ; but, in every case of suffering from teething, the indications to be fulfilled are, to cut asunder the parts which resist the protrusion of the tooth or teeth, and to palliate distressing or troublesome complaints.

As to the former of these indications, many prejudices have prevailed not merely among parents, but also among medical practitioners.—Of these only three require a formal refutation, viz. the injury that may arise from a scar on the gums, the risk of fatal bleeding from the di-

vided parts, and the probability that the second set of teeth may be placed unequally or irregularly.

The first of these, that the scar which forms when the teeth do not immediately advance after the operation, will increase the resistance to their eventual exit, is perfectly ideal, for no scar forms on the gum.—When the capsule inclosing the teeth has been fairly divided, it cannot reunite, so that one chief cause of pain and irritation is thereby removed. As no thickening follows the healing of the gum, the operation may be repeatedly performed over the same tooth or teeth, without any bad effect.

Excessive bleeding from the gums, which might debilitate greatly, or might even prove fatal, has been often urged as a strong objection against dividing the gums. One instance of this consequence of the operation has been reported to the Author, on evidence which he cannot controvert. But as he has now directed and witnessed the division of the gums in some thousand cases, and has never known such an occurrence, he must think the chance of its ever happening beyond all calculation. In general, the discharge of blood, after the incision, is less than could be wished, as, were it copious, it would tend to remove local swelling and inflammation.

The third argument usually stated against dividing the gums, that the beauty or regularity of the second set of teeth, are apt to be spoiled,

would be the most serious one, were it well founded. But this allegation cannot have originated from fair reasoning on the subject, and it is by no means warranted by observation. As the second set are placed underneath the milk teeth, it is impossible that the incision of the parts above those latter can affect them; and experience has unequivocally proven, that the operation has no influence whatever on the condition of the second set.

From mere analogy, the utility of dividing the gums when on the stretch, might be estimated. What remedy could so effectually remove a swelling and inflammation produced by a thorn in the flesh, as extracting the thorn? But it is unnecessary to offer any extended reasoning on a subject which is now ascertained by experience. Not only are the painful feelings relieved by the operation, but even convulsions, which had resisted every possible mode of treatment, have been known to cease from the moment that it was performed.

It is therefore to be regarded as indispensable, in every instance where pain or distress accompany dentition.

Though a very simple operation, the division of the gums above the protruding tooth or teeth has often been bungled. The object being, to cut through both the gum and the capsule which contains the tooth, a proper strong gum-lancet is to be used:—this is particularly necessary in the

case of the grinders, for if a single fibre remain undivided, the irritation continues.

Smart symptomatic fever, violent determination of blood to the head, emaciation and looseness, or deranged state of the bowels, are the most ordinary distressing or troublesome symptoms which require palliation.—If the feverishness be not moderated by the operation of cutting the gums, the use of the warm bath, the exhibition of a brisk purgative, and the application of one or two leeches, according to the strength of the infant, or the urgency of the case, must be ordered, and the bleeding ought to be encouraged for some time. If the bleeding continue too long, it is best stopped by pressure steadily applied for several minutes to the bites. On this account leeches should seldom be fixed on any part of infants which does not admit of being pressed upon by a linen compress or roller. But if the bleeding part cannot be thus compressed, the bites are to be touched with lunar caustic.

Where symptoms of great determination to the head have occurred, the same means, with the addition of a blister to the nape of the neck, are to be had recourse to. Under such circumstances, the ordinary doses of purgatives seem to have little effect, and hence it becomes necessary not only to give very large quantities, but also to repeat them frequently.

Emaciation is usually the effect of excessive looseness, and can only be arrested by most par-

ticular attention to the state of the bowels. Opium, combined with very minute proportions of calomel, are sometimes of great utility in such cases. If the infant have been weaned previous to the illness, his nourishment should consist principally of asses milk, weak beef-tea with rice, and arrow-root prepared with a considerable proportion of boiled milk. When costiveness occurs during teething, varied purgatives, in considerable doses, are required. It is often a good precautionary measure to premise such a dose of jalap as shall both vomit and purge.

Inflammation of the eyes sometimes continues even after several teeth are cut.—The eyes are to be frequently bathed with warm milk and water, the bowels are to be kept very open, and a burgundy pitch plaster is to be applied between the shoulders, and should be removed every eight or ten days.—This is of material benefit where slight cough attends.

The most formidable symptom except convulsions, which occurs during dentition, remains to be noticed : It is a kind of convulsive stricture of the upper part of the windpipe, producing a peculiar crowing sound, as if from threatening suffocation. This affection is quite momentary, and generally happens on awakening from sleep, on taking drink or food, or on the infant being teased or irritated. Sometimes the fits are redoubled, but more often they are single. The disease is unaccompanied by fever or any material derange-

ment of the general health. When cough attends, which is not always the case, it is not hoarse, and the breathing during the intervals is perfectly free. Those circumstances distinguish it from the croup, which it resembles in the crowing sound.

This complaint, it is believed, was first particularly described in the former editions of this work ; and although the Author had seen between thirty and forty cases of the disease, he was led to suppose it rather an uncommon occurrence, from the total silence of practical writers, and from its being quite unknown to the several medical men, with whom he met in consultation in the above cases.—He is now convinced, however, from additional experience, that it is one of the most frequent of the alarming symptoms which attend dentition, and he attributes its having been hitherto overlooked by the profession partly to its momentary duration, partly to its resemblance to the croup, and partly to the suddenness of its fatal termination.

It has appeared in the most robust as well as the most delicate infants, and it sometimes continues for months, occasionally decreasing in violence, and suddenly again becoming aggravated, so that for a week or two, the infant shall have forty or fifty attacks within the twenty-four hours, and then the number shall be diminished to eight or ten. The event to be dreaded is sudden suffocation, or a severe convulsion, from which the

infant cannot be recovered. In several cases, this has happened at the distance of many months from the first attack, and after the infant had seemed almost completely relieved from the disease. When the Author's attention was first directed to this unaccountable affection, (for the appearances after death have not at all elucidated its nature), he believed it was peculiar to the period of cutting the deciduous teeth; but he is now convinced that it may continue beyond that time, though he has seen no fatal event happen under such circumstances.

For the successful treatment of this complaint, the utmost attention on the part of the practitioner is required, as no reliance is to be placed on any apparent remission or mitigation of the characteristic symptoms; for so long as these continue to recur in any degree whatever, till all the milk teeth be protruded, danger is to be apprehended. The plan of cure which has hitherto seemed most successful has been, to watch the state of the gums, so as never to allow much local irritation from the pressure of the tooth; to open the bowels very freely by means of varied purgatives, with which absorbents or antacid medicines are combined; to regulate the diet; to direct some stimulant substance to be rubbed every six hours on the outside of the throat, and to give frequently some antispasmodic. After having tried the effects of preparations of opium, of hyocyamus, of valerian, and of assafoetida, without any appa-

rent benefit, Dalby's carminative, in doses repeated every four or five hours, or oftener, according to the urgency of the case, has appeared preferable to every other medicine.—Blisters on the throat or breast are to be used as auxiliaries ; and the warm bath, and preparations of antimony, and even of foxglove, are to be occasionally advised, for the purpose of palliating symptoms.

SECTION XIV.

Catarrhal Fever.

THE common catarrhal fever seldom requires any other treatment than an emetic at the beginning, an open state of the bowels, and the warm bath every night while it continues.—But there is a variety of catarrhal fever frequently met with during the severity of winter, which is of a very alarming nature.

It begins with cough and fever, and, soon after, excessive frequency and shortness of breathing suddenly take place. There is neither wheezing nor crowing, nor any apparent obstruction in the windpipe ; the pulse is so frequent and small that it cannot be numbered ; the heat of the skin is perceptibly increased, and, in robust infants, the colour of the countenance is rather more than usually red. In others, however, there is an ap-

parent shrinking of the features. At any rate, the face is seldom purple or flushed.

The infant seems so much pained on coughing, and on being handled, as to render it more than probable that there is at least a tendency to inflammation of the lungs, or of the parts within the chest.

The most active means are required for the treatment of this violent disease, and, therefore, at the commencement, one or more leeches, according to the age of the infant, are to be applied to the foot, and such a purgative should be given as shall secure the discharge of several watery stools, while preparations of hyoscyamus, or some similiar medicine, are to be prescribed for the purpose of allaying the cough.

Should these means prove ineffectual, or if the early stage of the disease be neglected, a large blister must be applied on the breast, and even the tincture of foxglove must be had recourse to. If the cough continue after the inflammatory symptoms have abated, emetics will be found highly beneficial. After the violence of the disease has been conquered, great debility is apt to follow, and hence wine whey and other cordials should then be prescribed.

When the first edition of this work was published, (twelve years ago), the Author felt it incumbent upon him to express in strong language his objections to the indiscriminate employment of

bleeding in this and other acute diseases of infancy, and he has much satisfaction in acknowledging that an important improvement in this respect has for the last seven or eight years taken place at least in this part of the world.—While there can be no doubt of the great utility of a prudent subtraction of blood in the early stage of this disease, reason would suggest what experience has often too sadly evinced, that bleeding, after a certain progress, has a direct tendency to sink the living powers, and, consequently, to accelerate the fatal event.

In neglected or mismanaged cases, therefore, the great objects in the treatment ought to be to support the strength, and to excite such a determination to the surface as may relieve the lungs.—The former of these is to be accomplished by suitable cordials, viz. wine and milk, and the aromatic spirit of ammonia, or the spirit of nitrous æther properly diluted with syrup and water. A large dose of the tincture of hyoscyamus is to be given evening and morning, for the purpose both of supporting the strength, and of allaying the irritation in the lungs. Preparations of opium are only useful where this affection supervenes to the measles, which it sometimes does.—The latter indication is best fulfilled by the application of blisters and other external stimulants, particularly amber oil, rubbed over the sides of the chest every six or eight hours.—Along with these

means gentle doses of laxative medicines to produce daily two or three evacuations are to be given.

SECTION XV.

Convulsions.

IN some cases, convulsions come on suddenly ; in others, the attack is gradual, and the first symptoms are not easily discerned by the attendants. In the former, the infant, from being in the most perfect health, turns in a moment livid, his eyes and features are contorted, and his limbs and whole frame are thrown into violent agitations. These symptoms are succeeded by a suspension of vital powers, as in faintings, which may prove fatal, or from which he may gradually recover.—In the latter cases, the infant shews some degree of uneasiness ; he suddenly changes colour, his lips quiver, his eyes are turned upwards, and he unexpectedly, as it were, stretches himself out, or his hands become clenched. The lesser degrees of these are called by nurses *inward fits*.

Sometimes there is a rapid and continued succession of violent or trifling fits, and sometimes very considerable intervals are interposed between them. The convulsions occur in various degrees of violence, as sometimes the agitation

is confined to the muscles of the face and extremities, and the affection is almost momentary, and sometimes the whole body is so convulsed that the infant starts up frequently from bed, and the fits are seldom off. In some cases even where the intervals between the paroxysms are pretty considerable, the infant remains torpid, insensible, and blind; and in other cases, the moment the fit is over, the sensibility returns, the first evidence of which is violent screaming.

Convulsions commonly precede the fatal termination of most diseases of infancy, which explains the reason of their appearing in the bills of mortality to be of such frequent occurrence. Accordingly, where they take place after any serious or protracted indisposition, they are to be regarded as the harbingers of death. But even where the infant had been in perfect health previous to the attack, the event is always to be considered as extremely uncertain, for a single fit may kill. When the return of the convulsions is not suspended within forty-eight hours after active treatment has been adopted, there is reason to dread either a sudden fatal termination or a long protraction of the disease. In this latter case, if the infant do not become emaciated, there is a probability of his eventual recovery, even although he had been blind and insensible for days or weeks. In some rare cases, though the health be restored, imbecility of mind remains. If emaciation

attend the protraction of fits, the living powers at last give way.

In ordinary cases, the danger is to be estimated by the cause of the fit, and by the degree of its violence.—Thus, if the cause be some irritation which is naturally of temporary duration, or which can be easily removed, a favourable event may be looked for; but if it be not obvious, it may be suspected to be some state of the brain which admits of no remedy. In many instances, where it was impossible to discover the cause of the fits during life, an accumualtion of water within the ventricles of the brain has been found after death.—As to the degrees of violence of the fits, there is always much uncertainty, for infants have recovered who had been for weeks scarcely a few hours free of fits, and others have sunk where the fits had been apparently trifling, and where they had recurred at distant intervals.

As circumstances induce convulsions during infancy, which have no such effect at a subsequent period of life, the predisposing causes of the disease have been supposed to depend chiefly, on the condition of the system previous to the appearance of all the deciduous teeth. There can be no doubt that, during all that time, the nervous system is extremely susceptible of impression, and the actions of the vascular system are very easily altered or deranged. Accordingly, it is well known that, in general, the younger the infant is, the more readily do fits occur, and that

the infants of some families are more liable than others to the disease, apparently from a weak state of the nervous or vascular system being communicated from the parents.

The obvious exciting causes are detention, mechanical injuries, acute diseases, impurities of the air, passions of the mind, indigestible or poisonous substances in the stomach, irritations in the bowels from acrid matter, or from worms, and overdistention of any portion of them, the sudden repulsion of eruptions of the skin, or the stoppage of drains of long standing, and the state of the system previous to the appearance of small-pox, measles, &c. All these act by disturbing the nervous system, or altering or deranging the actions of the vessels, and some of them probably produce both effects.

It was formerly believed that certain medicines have the specific power of curing convulsions; and considering the credulity of mankind, and the anxiety of parents, it is not at all surprising that this opinion should be from time to time revived. Cochineal, misletoe, and musk, are the pretended specifics which have been obtruded on the public of late years.

The cochineal has been chiefly used in the cases of very young infants. Four or five grains, infused for a day in half an English pint of boiling water, to which a few grains of carbonate of potash and some sugar are to be added, is the ordinary formula prescribed. Of this, one or two tea-

spoonsful, according to the age, should be given as a dose, to be repeated every hour while the disease continues. This medicine having been secretly employed in a case where, under the Author's superintendence, the most active means were at the same time used, and the recovery of the infant having been attributed exclusively to the cochineal, led him to give a very fair trial to this medicine. The result of his experience, in some hundred cases, has been, that it is perfectly inert; but as it can do no harm, he has been often induced to recommend its use in conjunction with the suitable powerful remedies, merely to prevent the officiousness of credulous persons from forcing it upon the notice of anxious parents.

Experience has also proved, that the misletoe has no specific power, although its virtues were so extravagantly extolled by a physician about the beginning of last century, (Sir John Colbatch), that he solemnly returns thanks to God for the discovery of so certain a cure for so alarming a malady.

Musk has been particularly recommended by Dr. Underwood, and is certainly a valuable medicine in many cases, but it is by no means entitled to the high character which that author bestows on it, as it seems to have no superior power to the other antispasmodics.—Of the quack medicines advertised for the cure of this disease, it may be proper to say, that, as far as the Author can

judge, they are merely preparations of opium in disguise, and therefore the observations to be made on that medicine are applicable to them.

Since no specific cure for convulsions has been hitherto discovered, the object of the practitioner ought to be, to moderate the violence or stop the progress of the fit, and to prevent its return.

The former of these indications is to be accomplished by having the infant, while in the fit, immersed in a large tubful of water, heated to the 96° of Fahrenheit, or to a warmth that the hand can easily bear. If, after being in the bath for a few minutes, he do not recover, such a quantity of spirits of hartshorn should be added to the water as shall render it tolerably stimulant. Should the fit still continue, a wetted feather is to be forced into the upper part of the throat, if there be any fulness of the vessels of the neck, or other evidence of threatening suffocation from oppression of the stomach ; and if there be no marks of such a state, an asafœtida glyster ought to be carefully administered. In general, however, the warm bath answers the purpose of shortening the fit, and therefore it ought always to be had recourse to whenever the fit threatens.—If there be burning heat of the surface, and if the fits have been preceded by startings, sponging the face and neck with cold water and vinegar, affords the readiest means of relief.

For preventing the return of the convulsions it is necessary to remove if possible their causes.—In order to ascertain these the infant is to be completely stript, and every part of its person is to be examined with great care.—No reliance is to be placed on the accounts of the attendants, as an injury which has been the effect of negligence is never disclosed. If there be no obvious cause, the gums over the teeth which appear the most advanced, are to be divided, a brisk purgative is to be given, and the purging is to be kept up so long as the stools are of an unnatural appearance.

Where the infant has evident determination to the head, indicated by flushed face, insensibility, or frequent starting and oppressed breathing, one or more leeches are to be applied to the temple. Where suppression of some accustomed evacuation, or repulsion of a rash, have preceded the fit, a large blister should be applied. The same remedy is useful when the cause is obscure, as affections of the skin are very often found to relieve irritation of internal parts. On the same principle, and also with the view of supporting the vital powers, some external stimulant is to be rubbed over the surface (as over the ribs or backbone) every six or eight hours. Amber oil, hartshorn and oil, or a mixture of one part of aromatic spirits of ammonia, two parts of laudanum, and three parts of olive oil, may be used for this pur-

pose. No more than one or two tea-spoonsful of any of those preparations should be applied at a time.

Several instances have fallen under the Author's observation, where external stimulants have apparently saved life, after the infant had lost the power of swallowing for two or three days. In some obstinate cases, shaving the head, and bathing it every hour or two with cold water and vinegar, in the proportion of one part of the latter to five of the former, has seemed singularly useful. Sometimes, too, fits which had continued for some days have ceased after a blister covering the whole head had begun to discharge freely.

Opium has been much employed in cases where the cause of the fits cannot be detected.—After having, for several years, been convinced in his own mind that this medicine is rather injurious than beneficial, the Author was induced again to give it a most impartial trial, from the recommendations of some of his senior brethren, to whose opinions he is always anxious to pay every deference. The result of this trial has been, that in no case has it ever seemed to increase the intervals between the fits; and in many instances it has evidently shortened them, while the fits have been more severe after every dose of opium. When the convulsions have been the effect of the whooping-cough, great benefit has been derived from the tincture of hyoscyamus. Twenty drops, evening and morning, have been

repeatedly given to infants within six months of age. Camphor, in the form of glyster, has seemed serviceable in some few cases, but chiefly in children beyond the second year. Where great debility attends, it is necessary to remark, cordials must be directed, and if the infant cannot swallow nourishing injections are to be exhibited every three hours.

When a child seems to be suddenly deprived of life by one or two fits, if he had appeared previously in good health, he ought on no account to be considered as irrecoverably lost: the common means for restoring suspended animation should be carefully employed as long as his colour is not entirely changed.

After an infant has recovered from convulsions, every plan which can improve the general health ought to be recommended, and all causes of irritation are to be guarded against with the utmost care; and as slight disorders of the stomach and bowels have often been followed by a most alarming return of the fits, great attention ought to be paid to the diet, &c.

SECTION XVI.

Cow-Pox.

It is now unnecessary to state any arguments in proof of the cow-pox being a certain preventive

of the small-pox, and still less can it be required that a formal detail should be offered of the important benefits which must result to mankind from the JENNERIAN discovery. But there are two circumstances which frequently perplex anxious parents, and which it may therefore be proper to notice in this work.

The first relates to the evidence of the cow-pox having affected the constitution, or, in popular language, being genuine. This, it must be admitted, is a subject of the utmost importance, as there can be no doubt that many individuals who have been vaccinated have afterwards been infected with small-pox. Advantage has been taken of such cases by those whom selfish considerations have led to decry vaccination; and the difficulty of distinguishing, in many instances, the true from the spurious cow-pox, or that constitutional affection which secures the individual against the contagion of the small-pox, from that local disease of the arm which follows the puncture of a lancet charged with vaccine matter, is certainly the only plausible argument which can be urged against the practice.

That a minute attention to the progress of the disease may enable an intelligent practitioner to determine this point may be true, without being satisfactory to every parent; for all practitioners cannot be supposed equally attentive and intelligent.—It may, indeed, be truly affirmed that if inoculation for the cow-pox were confined to

intelligent and attentive practitioners, it would be of great importance to society; for much mischief has certainly accrued from the indiscriminate introduction and encouragement of the practice.

Happily for mankind, a true test has been found out, not by chance, as the original discovery was made, but by rational induction from analogy. Mr. BRYCE, surgeon here, recollecting, that in the inoculation for small-pox, experiments had been instituted, by which it had been ascertained, that punctures, made every day till the fever induced by the first operation began, advanced so quickly in their progress from that period, as to be all in the same state of maturity within twenty-four hours from the occurrence of the fever, concluded that the same must happen in cow-pox, whenever the constitutional affection takes place. This theory he put to the test of experience, and found it completely confirmed. The result of his varied and extensive observations on the subject has been, that when the second vaccination is performed, at the end of the fifth or beginning of the sixth day, if the first advance in the regular manner, the progress of both goes on equally from the eighth or ninth day, the one being the miniature representation of the other, provided the constitutional affection have actually occurred,—but that if the first puncture fail the second advances as the first should have done. In that case a third is to be made at the

end of the fifth day, or between thirty-six and forty-eight hours before the expected appearance of the areola of the puncture which has taken effect, and so on till the two vaccinations of the different periods correspond regularly in progress and decline. *

This is not a negative proof, like all the others hitherto proposed; for if the second puncture take effect, it is quite conclusive evidence that the constitution is under the influence of the cow-pox; and as the virus is to be employed while in the highest state of activity, and is to be immediately transferred from the one arm into the other, it is scarcely possible for it to fail, unless the operator be very awkward or very careless. The value of this discovery, which ascertains a point of such importance, can only be appretiated by those who can judge of the subject, but may be beneficial to all.

It must be unnecessary to remark, that on so interesting a subject no human precaution can be superfluous, and on this principle children already vaccinated in the ordinary way, should be again vaccinated carefully, and if the infection take place, Mr. Bryce's plan should be followed. Inoculation with the small-pox has been recommended as affording the better security; but as certain

* See Practical Observations on the Inoculation of Cow-pox, by James Bryce, 2d Edit.

hazards may in many families result from this practice, the former must be the preferable as it is the safer method.

The other circumstance, in regard to vaccination, which is often apprehended, is the occurrence of obstinate or ugly eruptions on the skin. For this apprehension, however, there is no reason, in as far as can be judged, according to the experience of those who have the most carefully attended to the subject. All the affections of the skin supposed to have been the effects of the cow-pox, hitherto seen by impartial observers, were diseases with which physicians were familiar long before Dr. Jenner and his discovery were ever heard of; and no unprejudiced practitioner has ever ventured to assert, that any new eruption of the skin has appeared since vaccination became general.

It would be inconsistent with the object of this work to give any directions for the treatment of cow-pox. The valuable treatise of Mr. Bryce may, with great confidence, be referred to. It is proper, however, to mention, that cases have occurred in which erysipelatous inflammation, extending over the whole arm, shoulder, and part of the back, followed the scab, although the disease had gone through its usual course.

CHAPTER II.

DISEASES OF CHILDHOOD.

CHILDHOOD extends from the period at which all the milk teeth are protruded above the gums to the age of puberty. During all that time, the growth of every part of the body is progressively advancing; the several limbs are acquiring increased activity and strength; the various secretions and excretions are gradually altering in their appearance and nature; and the organs of the senses, and the faculties of the mind, are improving in power and in energy.

While those important changes are going on, the bones acquire additional strength and size, the ligaments and muscles become firm, the cellular membrane and skin more dense, the action of the heart and arteries less frequent, the respiration more slow, the nervous system less susceptible of impression, and the sympathy between the skin and the internal parts less considerable.

The milk teeth begin to drop out or to be shed, as it is called, from the fifth to the seventh year, and the cutting of the permanent teeth goes on till the twelfth or fourteenth, by which time twenty-eight teeth are above the gums. The wisdom teeth, which complete the number, are, in many

instances, not added till between the twentieth and thirtieth year. The milk teeth are shed by the simplest possible means, for their roots and part of the cells in which they had been contained being pressed upon in consequence of the enlargement of the second set of teeth, are wasted or absorbed, so that they are more and more loosened, till they drop out. It is a popular notion that the milk grinders are not shed, but this has arisen probably from their being rendered so thin previous to their separation, that they are imperceptibly swallowed with the food or while asleep.

The following is the order in which the permanent teeth generally appear. First, the middle fore teeth of the lower, and the same of the upper jaw; secondly, the lateral fore teeth, and soon after, the anterior grinders of the lower jaw; thirdly, some time commonly now intervenes, and then the corresponding teeth of the upper jaw are cut; fourthly, the anterior bicuspidati of both jaws come out about the ninth year, and about the tenth or eleventh, the posterior ones; and lastly, about the twelfth or fourteenth year, the cuspidati or eye teeth, and the central grinders are protruded all about the same time. The wisdom teeth, as already mentioned, do not appear for several years after this. From the above order of succession there are many exceptions, as children often cut their permanent teeth very irregularly.

SECTION I.

Ordinary Management of Children.

OF the importance of attending to the ordinary management of children no one can doubt, and yet there are few duties more neglected. Ignorant or selfish persons are often intrusted with a charge, which would afford to the opulent and idle the most useful and agreeable occupation, and to the industrious and active part of the community, the most gratifying recreation. In this work it would be improper to dwell minutely on this subject, and therefore a few very concise hints are all that can be attempted.

Cleanliness.—This should be inculcated as a duty from the earliest period, as nothing can contribute more to content of the mind and health of the body. On this account the child ought to be taught the utmost cleanliness of person, not only by frequent ablution in general, but also by minute attention to the state of the hair, nails, and teeth. There can be no doubt that many of the diseases of children in the lower ranks both general and local are owing entirely to neglect of cleanliness.

Clothing.—In this climate the clothing should never be so heavy as to render ordinary exertions fatiguing, but it ought to be calculated to retain heat. The attempts to rear children in a hardy

manner, by allowing their legs to be bare, and other parts of the body to be much exposed, have proved most unsuccessful, having, in many instances, stunted or perverted the growth, and, in some cases, absolutely destroyed life, by inducing inflammation of the bowels or lungs. It is unnecessary to add, that cleanliness in the dress is indispensable.

Food.—The change of diet, after weaning, should be introduced gradually. Preparations of milk, of eggs, of vegetable and animal jellies, should precede solid animal food. During childhood the diet should be varied, and the proportion of vegetable and animal matter ought to be adapted to the constitution of the individual. The indiscriminate use of slops is most injurious, as it certainly increases the tendency to scrofulous complaints. No other condiment than salt seems necessary, and all fermented liquors, except small beer or spruce beer, are pernicious.

Sleep and Exercise.—For the first two years of life a good deal of sleep is required, but, after that time, from eight to ten hours are sufficient. It is of the utmost importance that the bed-chamber be well ventilated; and therefore the practice, in many boarding-schools, of crowding several children into one sleeping room, cannot be too much reprobated.

Exercise of the body and of the mind is fully as essential to the child's health as suitable nourishment. Not only ought all the amusements

to be calculated to promote this, but even the studies should be subservient to the same purpose. Children have an ardent curiosity, a most retentive memory, and a strong propensity to, as well as a great power of imitation. Those circumstances prevent their being capable of patient attention to one object for any length of time, and explain the perpetual restlessness, levity, and caprice, which form the characteristics of that age. In regulating the exercise of the mind and body, those natural dispositions should be invariably kept in view. It may be truly said, that many facts relating to mechanics and to natural history may be communicated with advantage to young children. It is easy therefore to contrive variety of occupation for their minds, and, at the same time, to afford them a good deal of bodily exercise in the open air, without allowing them to acquire those habits of idleness and of sauntering, which are sometimes with so much difficulty eradicated,

SECTION II.

Local Diseases.

Ear-ach—is a very common and a very painful complaint. Its progress may often be checked by means of a large poultice of bread and milk, with a little fine oil, applied as warm as the child can bear, and renewed every three or four hours,

till the pain be relieved, together with the exhibition of a brisk purgative. Where the child has had repeated attacks of this disease, a little warm oil and laudanum should be dropt into the ear before the poultice be applied.

If suppuration follow, some warm milk and water ought to be carefully injected by a syringe three or four times a-day, in order to wash out the matter. In some cases, a discharge of what seems purulent matter, having a most offensive smell, continues for weeks, or even for months, attended with partial deafness. There is reason to suspect that, in general, this discharge is a diseased condition of the ear-wax, and on this account detergent or astringent washes might do great harm. The frequent injection of milk and water, as in the former case, a succession of blisters on the back, applying a fresh one whenever the former one shall have healed, (which is better than a perpetual blister), and some tonic medicines, such as filings of iron covered with sugar, or wine of steel, are to be directed.

Burns.—In many constitutions, burns or scalds, which seem at first quite trifling, become, from mismanagement or neglect, most troublesome sores, leaving ugly marks, or even undermining health. All parents ought therefore to be acquainted with the following most simple and efficacious means of treating them.

If the scarf-skin be not removed by the injury, cold vinegar (the stronger the better) should be

immediately applied to the parts affected, by means of linen rags soaked in it, and kept constantly wet ; and, notwithstanding the aggravation of agony occasioned by this application, it is to be continued till the pain abate. In some irritable children, it is necessary to give a large dose of opium, in order to enable them to bear it, and, provided a brisk laxative be directed within a few hours, no harm can follow the opiate.—When blisters arise on the burned part, they are to be opened before the fluid within them concretes, and to be covered with any unctuous substance to defend them from the acrimony of the vinegar.—Where the scarf-skin is removed, a rag dipt in a mixture of equal parts of linseed oil and lime water, is to be first put on, and above that the vinegar should be applied.

The treatment, when sores follow burns, must be varied according to circumstances. If they be superficial, and so situated that it is of consequence to prevent the possibility of a mark or scar, the best application is the liniment directed in the appendix, put on several times a-day by means of a fine hair pencil. Where the sores are extensive, seem deep, and discharge copiously, they should be covered evening and morning, or more frequently, according to the exigency of the case, with a mixture of powdered camphor and chalk, over which a large emollient poultice of bread and milk, as warm as can be endured, ought to be laid.

Chilblains.—In some children, the delicacy of

the skin is such that no ordinary means can prevent chilblains. In the majority of cases, however, the usual precautions of making the child wear leather, or oiled silk gloves and socks, of never allowing him to sit for any length of time with wet feet, nor to approach the fire when his feet or hands have become torpid with the cold, are quite sufficient.

Slight degrees of chilblains may be readily cured by applying to the affected parts any stimulating liquid, as camphor dissolved in oil of turpentine, or spirits of wine, or the common Riga balsam, and keeping them well covered, so as to prevent the access of cold. A very efficacious form of stimulating application has been employed successfully, where other means have failed viz. a mixture of one part of the aqua ammoniæ with three parts of the tincture of soap.

The violent degrees of chilblains, which in this climate seldom occur in any other than the lower ranks of society, resemble burns in their appearance and consequences. This explains a fact which is well known among mariners who have been accustomed to high latitudes, that the continued application of strong vinegar, in some cases where sailor boys were quite lame from this cause, has completely cured them in four or five days. The ordinary sores which follow chilblains yield to any slightly stimulant dressing, such as one part of the oil of turpentine to four parts of basilicon ointment.

Warts.—If attended to at the beginning, these may be readily removed, by being wetted four or five times a-day with a saturated solution of sal ammoniac, (muriate of ammonia), which is the only caustic application that can be used with safety by others than professional men.

Squinting.—When this is an effect of some acute disease, it ceases with the other symptoms, and requires no particular attention; but, when it is unconnected with general health, it merits the most unremitting care, because the deformity may be certainly cured, or greatly palliated. As the most simple means may be employed for this purpose, there can be no excuse for negligence.

In infants the eye which squints should be artificially closed, for several days or weeks, according to the effect, or a patch of bright-coloured silk should be applied daily (varying the colour occasionally) on the nose or on the temple next the affected eye, as the squint may be outwards or inwards. This method has been much recommended by Dr. Underwood.—Young children who squint should be made to wear constantly, for many months, light wooden goggles so nicely fitted, as to prevent their seeing with both eyes unless the pupils of both be directed straight forwards.—Should this prove of no avail, the sound eye may be tied up, while the goggle is to be adapted carefully to the other eye.

If a child be conscious of squinting, which is sometimes the case at an earlier age than might

be suspected, or if the habit have been acquired from imitation, a cure may be certainly accomplished, by having the child constantly watched, and inflicting, or threatening a severe punishment every time he is caught squinting. This method has diminished the deformity, in many instances, where the habit had been established for too long a period to be completely eradicated.

Affection of the hairy scalp, called Ring-worm.

—This disease, beginning like a dry scurf in one or more spots on the head, and destroying the hair of the part, by degrees spreads over the scalp, and forms scabs which are generally in patches.—It is quite different from the common scald-head ; and its connection with *Ring-worm* is proved by that peculiar affection of the skin appearing occasionally upon the brow, or hands, or wrists.—It is highly infectious, and, when neglected at first, proves one of the most obstinate local diseases. This has led some practitioners to suppose it connected with some disorder of the general system, and others to suggest the most barbarous methods of treatment, such as extirpating the hair with tweezers, or with a pitch cap, &c.

The slight or incipient degrees of this disorder may be readily cured, by having the affected parts bathed every night with hot vinegar, and afterwards rubbed with the mild citron ointment.—In cases of long standing, the head must be kept shaved and anointed for a number of nights, proportioned to the virulence of the affection,

with the ointment called *unguentum ad scabiem*, prescribed in the *Pharmacopæia Pauperum* of Henry Banyer, the preparation of which is specified in the appendix.—In some cases, where the child is delicate, it is necessary to mix that ointment with an equal part of simple cerate, and sometimes its use must be alternated with that of *basilicon* ointment.

Many cases of the disease have been cured by those means, where the sulphur, the tar, and the ordinary mercurial ointments, linseed oil and lime water, a strong infusion of tobacco, and several other powerful stimulating applications have failed. But it requires unremitting attention on the part of the practitioner, to direct the mode of using the ointment, and the applications with which it should be alternated.—The chief error usually committed, which, perhaps, may explain the failure of ordinary practitioners in so many cases, is desisting from the means before the cure be completed.—It is always proper, in every case, to regulate the diet, and to direct a brisk opening medicine to be given every third or fourth day.—In cases of very long standing, (and the Author has been consulted in cases where the disease had continued for nine years), a course of Plommer's pills or Spilsbury's drops ought to be prescribed.

SECTION III.

Bowel Complaints.

Vomiting—precedes many febrile and inflammatory diseases of children, and, therefore, if it be accompanied with any evidence of fever or pain, it is to be regarded as a symptom depending upon some affection of the general system.—Under such circumstances, the treatment directed for the several disorders alluded to is to be pursued.—But sometimes it is the effect of some indigestible substance pent up in the stomach. This may be suspected, if the pulse be natural, the appetite impaired, and the thirst considerable, while the vomiting remits and recurs. Pieces of cheesy matter, apparently formed from milk that had been swallowed weeks before, have been sometimes found to have produced all the irritation in such cases.—Ipecacuan vomits are the obvious remedies.

Looseness.—Where this does not happen after some disease, which had previously diminished the energy of the system, it is of little consequence, and ought not to be suddenly checked. An emetic, followed up by a dose of rhubarb and magnesia, or some preparation of chalk, or some of the neutral salts, or, in some few cases, small doses of calomel and Dover's powder, with a suitable regulation of the diet, should be prescribed.

Costiveness.—This is sometimes an accidental occurrence, in consequence of inattention to diet, or exposure to cold, and is readily removed by the ordinary means. But in some cases it is a chronic disease, which steals on gradually, attended with loss of appetite, pasty colour of the countenance, constant itching of the nose, fetid breath, grinding of the teeth during sleep, flabbiness of the flesh, unwillingness to make any exertion, and swelling of the belly.

If these symptoms be neglected, a number of very distressing complaints follow; such as excessive thirst, urgent fever, aggravated towards night, violent pain in the head, occasional delirium, inability to articulate, constant picking of the nostrils or lips, or even of the eyes, and involuntary gesticulations, approaching to or imitating convulsions. Those different complaints, which are variously modified in different cases, have been very accurately described by Dr. Butter, under the title of the infantile remittent fever. Their duration is more variable than he has supposed, but their gradual abatement, as the child becomes convalescent, has been minutely and faithfully detailed by that author.*

The former degree of this complaint can be distinguished without difficulty, but the latter so

* A Treatise on the Infantile Remittent Fever, by William Butter, M. D. &c. 1782.

nearly resembles complicated fevers, or affections of the head, that the most experienced and attentive practitioner is sometimes at a loss to ascertain the true nature of the case. The appearance of the countenance, the nature of the stools, and the state of the pulse, are the chief marks of distinction.

There can be little doubt, that neither the mere accumulation of the stools nor the torpor of the bowels on which that appears to depend, can explain the various symptoms produced by this condition of the digestive organs. There is every reason to suppose that there is an altered action, not only in the stomach and intestines, but also in the liver and lacteals, perhaps in all the parts concerned in the digestion of the food. When this has continued for a certain time, the accumulation of acrid matter, which is the consequence, adds greatly to the irritation, and, while all this is going on, the circulating juices become depraved.

In the treatment of those cases, the great object to be aimed at should be, to alter the morbid actions of the digestive organs, and to palliate the distressing symptoms which attend. The former of these is to be accomplished by the use of powerful and varied purgatives, in much larger doses than were formerly prescribed. Rhubarb, aloes, gamboge, jalap, senna, cathartic extract, and castor oil, may in some cases be severally necessary. The doses are to be given every six or eight

hours till they operate, and their effects are to be kept up by varying the medicine till the stools discharged be of the natural colour and consistence. The quantity of vitiated feculent matter which is sometimes thrown off before this favourable change takes place, can scarcely be imagined. On this subject the observations of Dr. Hamilton, senior, in his valuable publication on the use of purgatives, confirm what the author had been accustomed to mention in his lectures for several years before the appearance of that publication.

Where the disease is in the mild degree described above, it gives way in a few days to this treatment, and all that is further required is some tonic medicine, which shall strengthen the stomach and bowels, together with a due regulation of the diet, and occasionally a purgative at bed-time. Preparations of iron are found the best tonics in those cases, and there are two forms in which children readily take that mineral, viz. the filings covered with sugar (sold by the confectioners in this city under the name of steel carvy) and wine of iron. The dose of the filings should be a half tea-spoonful once or twice a-day according to the age, that of the wine, a tea-spoonful.

But where the disease has been of long standing, or where it is accompanied by the febrile and other symptoms already enumerated, the mere exhibition of laxative medicines proves of no avail, as they are either rejected by vomiting, or remain

inert in the stomach and bowels. Under those circumstances, the belly is to be fomented every six or eight hours by means of flannels wrung out of a hot decoction of chamomile flowers, after which some stimulating substance, such as the ol. ammoniatum, with opium or camphor, should be carefully rubbed all over its surface. If the torpor of the bowels still resist the purgatives, small doses (as a grain) of calomel, combined with extract of hyoscyamus or opium, should be given every six hours, and a solution of aloes in a strong decoction of senna, to which some salt or castor oil are to be added, ought to be occasionally exhibited as a glyster. In some cases, antimonial preparations, combined with the mecurials and opiates, have relieved all the symptoms very rapidly.

During the progress of convalescence, suitable nourishment, with a moderate allowance of wine, asses milk, preparations of myrrh and steel, the warm bath, particularly with sea water, and country air and exercise, are to be advised.

Falling down of the Gut.—This is a common effect of bowel complaints, and seems to consist in a relaxation of the straight gut, with, at the same time, a spasmodic stricture of its sphincter. It is generally of temporary duration only, and is easily replaced by slight pressure. Nurses commonly apply a piece of woollen cloth for this purpose, but a better plan is to lay the child upon his face, to separate his thighs, and then to press to-

gether both his buttocks. If those means fail, it becomes necessary to introduce the fore-finger, previously greased, into the gut, to remove the stricture from the sphincter. This is a more safe and speedy method than the application of astringent substances to the protruded parts, which might irritate or inflame them.—With the view of preventing the frequent recurrence of this most unpleasant, though not dangerous complaint, all irritations of the bowels ought to be guarded against, the bottom should be dipt twice a-day into a tubful of cold water, in which a red-hot iron had been repeatedly quenched, and the child ought to be made to sit regularly on a firm hard seat.

SECTION IV.

Worms.

THREE species of worms chiefly infest the human intestines, viz. what naturalists call the *tenia*, the *lumbricus*, and the *ascaris*. As the first of these is very rarely met with in children in this climate, it is unnecessary to offer any observations on it.—The *Lumbricus* resembles, in general appearance, the earth-worm ; but when minutely examined, is discovered to be perfectly different in structure.—The *Ascaris* is a small white worm, like a piece of ordinary sewing thread, not ex-

ceeding an inch in length.—The lumbrici have been found in every part of the alimentary canal, but chiefly in the small intestines.—The ascaris is generally confined to the straight gut.

The origin of these worms is involved in much obscurity. As they cannot live in any other situation than in animal bodies, it is not probable that they originate from ova taken in with the food, and it is still less probable that they are the product of putrefaction. That particular articles of diet favour their increase is a prevalent belief, but this seems to be one of the popular prejudices for which there is no valid foundation.

As *lumbrici* have appeared in the healthiest children, many most respectable practitioners ascribe all the symptoms usually supposed to arise from worms to indigestion, and to the accumulation of acrimonious matter in the intestines. Some have improved upon this idea by asserting, that worms answer the useful purpose of consuming what is superfluous or acrimonious in the food.—When this subject is impartially considered, however, it will appear that there is more reason for the popular opinion than many practitioners have thought.—If ascarides in the straight gut by their irritation disturb other parts of the intestines, which, it is presumed, will not be denied, it can scarcely be doubted that lumbrici affect the parts in which they are placed. Accordingly, in many instances, a lumbricus has been

found in a portion of the gut that had been introsuscepted, and in one case (in a child of six years of age) delirium and convulsions took place for above two days, till two lumbrici were vomited from the stomach, on which all irritation ceased.—Many of the symptoms occurring where there are lumbrici, are owing entirely to an impaired or diseased condition of the stomach and bowels; but that this may have been originally occasioned, or may be greatly aggravated by the irritation of the worms, is indisputable; and it is probably the difficulty of distinguishing this from the other causes of indigestion which has led to the controversies on this subject.

The symptoms commonly alleged to denote the presence of *lumbrici*, are sallowness of the complexion, dulness of the eyes, frequent pain in the head, swelling of the nostrils and upper lip, excessive itching at the nose, grinding of the teeth during sleep, fetid breath, irregular appetite for food, there being sometimes a loathing and at other times a most urgent craving, occasional sickness, swelling of the stomach and bowels, frequent fits of griping, disturbed sleep and frightful screamings during the night, short dry cough, wasting of the flesh, and reduction of strength. Convulsions and irregular fevers, sometimes imitating very nearly the symptoms of water of the head, have also been alleged to indicate the same cause.—It must however be admitted, that these symptoms, or many of them at least, are met with

in cases where no worms are discovered,—and, therefore, it is in every case extremely difficult if not impossible to determine where there be worms unless they appear in the stools.

Since it is impossible to point out with precision the marks by which the presence of *lumbrici* may be ascertained, it is fortunate that the practice proper in cases of indigestion is the best which can be adopted at first, in those where all the complaints have been excited by worms.—In the early stages, that is, when children begin to droop, to feel tired after the most trifling exertions, to lose their appetite for food, and to shew signs of irritation in the stomach and bowels, one or two doses of brisk purgatives, followed by a course of any tonic, such as the worm crude, chamomile flowers, preparations of iron, &c. are all that may be necessary.

But where the complaints have become alarming and complicated, along with the means already recommended for those cases which have been styled by Dr. Butter the infantile remittent fever, medicines calculated to poison the worms should be prescribed. Of these the most efficacious, according to the Author's experience, are oil of turpentine, calomel, gamboge, and sea salt, or neutral salts combined with sulphur. To these Dr. Parr, in his Medical Dictionary, a work containing a very valuable collection of practical observations, has added the bears-foot, which he considered as a specific for the destruction of

worms. Much larger doses of some of the remedies above enumerated than are usually advised should be directed. It is in this respect alone that the patent worm-medicines are so much superior to the prescriptions of regular practitioners.

Ascarides may be suspected if the child have frequent colick, with excessive itching about the extremity of the gut, and in some cases irritation about the bladder.—The ordinary means for the expulsion of those worms, viz. stimulating glysters, such as a strong decoction of chamomile flowers with salt and castor oil, or a quantity of aloes suspended in cow milk, or mucilage of gum-arabic, to which salt and castor oil are to be added, are usually efficacious where they can be exhibited. But children are so restless from the second to the fifth year, that they can seldom be prevailed upon to submit to this practice. In such cases, a large dose of aloes in fine powder, with a small proportion of calomel, given every third or fourth night, seldom fails to answer the purpose most effectually.

SECTION V.

Fevers.

THE common low fever sometimes prevails as an epidemic among children. It begins more fre-

quently with marks of languor and fatigue than with a distinct chilly or cold fit. Sickness at stomach, too, is an ordinary occurrence at the commencement. The increased heat, thirst, pain in the head and back, and restlessness, soon follow. Within thirty-six hours there is, in the greater number of cases, a more remarkable remission than is usual in grown persons affected with the same disease; and this remission recurs every twenty-four hours, though in a less evident degree, till the termination of the fever. The exacerbation which corresponds, is equally remarkable at first.

If the fever do not abate on the fourteenth, it is apt to last till the twenty-first or twenty-eighth, or even the thirty-ninth day. Where it is much protracted, insensibility, with incapability of swallowing, sometimes occurs for a considerable time before the crisis; and after the original disease has ceased, there is always hazard of hectic fever or dropsical complaints succeeding.

Any detailed view of the causes and cure of low fever, would be misplaced in a work of this kind; all that should be aimed at being a few hints.

On the first appearance of indisposition, a large dose of ipecacuan, to produce full vomiting, should be given, and as soon after as the stomach can retain it, some powerful laxative medicine. If these means do not relieve or prevent the dry burning

heat of the skin, the whole surface is to be sponged with cold water, to which a little vinegar ought to be added, and the child may be allowed to drink as much of any cooling liquor as his thirst prompts him to do. But if there be fixed pain in any particular part, or any tendency to bleeding at the nose, the application of one or two or more leeches ought to precede the cold aspersion. If the remission happen after this treatment, diluted wine, in a quantity proportioned to the state of the individual, very often has the effect of preventing the return of the fever. When the first symptoms have been neglected, while the seventh day has not passed, the emetic cannot be advised, but the other means are to be employed.

If the fever be protracted, the chief circumstances to be attended to are, the most scrupulous cleanliness, sponging the surface whenever the heat is unequivocally greater than natural, due ventilation, with sufficient coolness of the air of the apartment, regular supply of cooling drink, such means as shall procure one or two or more dejections daily, and whenever the low stage begins, supporting the strength by the liberal use of diluted or pure wine, and by a succession of blisters, if the living powers sink greatly.

When considerable oppression, tendency to vomiting, or much restlessness, with great frequency of the pulse, and hot skin with a parched tongue take place pretty early in the course of the fever,

some antimonial preparation, joined with calomel and jalap or aloes, has been found to occasion the free discharge of a great quantity of bilious matter which had resisted other means, and to produce a very unexpected and rapid cessation of all the alarming symptoms.

In cases of long protracted fever, when the child seems quite torpid and apparently exhausted, nourishment should be supplied by injections of beef-tea, wine and milk, or panada and wine frequently repeated. Parents ought to be encouraged never to lose hope on such occasions, as many recoveries have happened where the most eminent practitioners had despaired. Frequent trials ought to be made to ascertain when the power of swallowing is restored, for it has often been found that children could be made to swallow when the attendants had relinquished all attempts at giving food by the mouth. Blisters to the extremities, or sinapisms to the soles of the feet applied for a quarter of an hour at a time, have sometimes seemed to rouse the vital powers after they had been supposed nearly extinct.

Whenever convalescence begins, the same precautions are to be adopted as after the decline of eruptive fevers. If considerable debility of the mind remain, notwithstanding the recovery of bodily strength, country air and exercise, with cold bathing, are to be directed. Although many months, in some instances, have elapsed before there was any perceptible improvement in the

mental powers, yet at last the child has regained the full use of its faculties.

SECTION VI.

Epilepsy and St. Vitus's Dance.

Epilepsy.—This is distinguished from the symptomatic convulsions, which are the effect of irritation, of terror, of blows upon the head or other parts, of water in the head, or of feverish disorders, by the suddenness of the attack, the previous history of the child, and the restoration of the usual state of health a very short time after the cessation of the fit.—The progress and event of this disease are so various and uncertain, that it is quite impossible to form any accurate conjecture respecting them in any given case. In some individuals the convulsions become more and more frequent, the energy of the mind decreases in proportion, the countenance assumes a marked appearance of stupidity, fatuity takes place, and the strength is at last exhausted. In others, the fits happen only now and then, chiefly during the night, or after fatigue or excess of any kind, the senses and the bodily health remain entire, and towards puberty the disease ceases entirely. On some occasions, the child, after having had convulsions several times a-day for a considerable time, suddenly becomes well.

The causes of epilepsy are extremely obscure. In some children very trifling circumstances produce it ; such as constipation, worms, fatigue, anxiety, and irregularities of diet ; while the occurrence of the same circumstances, even in a greater degree of violence, in other individuals, has no such influence. That the disease depends upon some peculiar condition of the nervous system cannot be doubted, but what that is has not yet been satisfactorily explained.

With regard to the method of cure, many of the observations already detailed, on the subject of the convulsions of infants, are equally applicable to the epilepsy of children. The indications to be kept in view are, to remove or prevent the exciting causes if these be manifest, and to improve the general health. Where the exciting causes are obscure, a continued course of purgatives, occasional blisters, issues by means of a seton, and the various antispasmodic and tonic medicines, such as valerian, asafoetida, musk, opium, hyoscyamus, and the different preparations of iron, copper, silver, or mercury have been recommended. The misletoe, foxglove, and even arsenic, have been tried, and occasionally extolled.

Of the utility of all of those medicines in different cases ample testimonies have been exhibited, and yet every candid practitioner must own, that cases from time to time are met with where every remedy proves of no avail. It is however

a duty to make every possible effort to arrest the progress of so deplorable a complaint, and the unexpected recoveries sometimes witnessed should encourage practitioners to persevere, and parents not to despond. If the mental faculties remain unimpaired, much may be done in lessening the frequency of the fits, by a proper regulation of what are styled the non-naturals.

St. Vitus's Dance—is the name given to involuntary gesticulations of the face and limbs, which cease entirely during sleep. For an accurate description of the progress and cure of this disease, the reader is, with great confidence, referred to the work on Purgatives of Dr. Hamilton, senior.

It was well known to practitioners, that when those irregular convulsive affections occurred during the febrile disorders of children, they were occasioned by irritations of the stomach and bowels, but Dr. Hamilton, senior, was the first physician in this city who discovered that the same cause produces the chronic disease. Dr. Underwood hints at this, and Dr. Par of Exeter had adopted the same idea above twenty years ago, and has mentioned, that the plan of giving repeated and powerful purgatives had succeeded in fifty-nine out of sixty cases. The coincidence on this subject between practitioners situated at such a distance from each other, affords a most satisfactory evidence of the efficacy of the practice.

CHAPTER III.

DISEASES COMMON TO INFANTS AND CHILDREN.

IN the two former chapters, the term *infancy* has been applied to the period which intervenes between birth and the complete protrusion of all the milk teeth, and that of *childhood* has been understood to comprehend the remaining years which precede puberty. Of the diseases described in those two chapters, some have been included under either of them, though they are occasionally met with both in infants and children; and in this chapter some disorders are detailed, to which adults as well as children are liable. The reason for thus extending the observations to some of the diseases common to adults and children is, that the treatment of such complaints should be very different, for what has been found most successful in grown persons, proves in some instances most injurious in children.

SECTION I.

Anomalous Eruptions of the Skin.

BOTH infants and children are liable to eruptions of the skin, of various forms and appearan-

ces, of which it is impossible to convey an accurate idea by mere description. Dr. Underwood has, in this respect, done all that a perfect knowledge of the subject, and that language the most intelligible, by being divested of technical terms, could do, and yet it is believed that few practitioners even can recognise many of the eruptive disorders which he has enumerated. In fact, the delicacy of the skin of infants and children, subjects them to eruptions from very slight causes, and those eruptions assume various forms, apparently in consequence of the original constitution of the individual.

Some eruptions resemble measles, others are more like small-pox in some of its stages, some have the appearance of nettle-rash, and others of what has vulgarly been called scurvy, and technically herpes. The appearance of some of them is preceded by symptoms of general indisposition, while that of others takes place without any previous warning. A few occur after some febrile or inflammatory affection of the system, and seem to be critical. Many of them are only of temporary duration : others continue for weeks or months. Several of them occasion no distress after they appear, others keep up a constant degree of irritation till they decline.

All those eruptions, however different in appearance, may be divided into two classes, viz. those of a temporary, and those of an indefinite duration. The former are commonly ushered in

with symptoms of general indisposition, the latter break out gradually without any derangement of the ordinary health. The former are owing to some disorder of the stomach or bowels, or some interruption of the usual excretions or secretions. The latter are probably, in most instances, the effects of some diseased condition or action of the lymphatic system, though sometimes they may be occasioned by a local affection of the skin itself.

This distinction is made for the purpose, not of aiming at the vain parade of science, but of explaining the practice. Where symptoms of indisposition, such as heat, restlessness, sickness or oppression, are followed by an eruption, a dose of some combination of antimonial and laxative medicines that shall both vomit and purge, together with the warm bath, should be first prescribed, and afterwards occasional purgatives and a suitable regulation of the diet are to be advised. But where the appearance of the eruption is unaccompanied by fever or marks of indisposition, some of the medicines called alteratives, and the daily use of warm bathing, particularly in sea water, should be recommended.

The medicines supposed to have an alterative power are, preparations of mercury, of antimony, of sulphur, and of neutral salts. But as mercurial preparations are always hazardous to children the antimonial wine, or the sulphuret of antimony, or Harrowgate or Cheltenham waters, or

some imitation of these, are the remedies to be chiefly depended upon. It is commonly necessary to order a protracted course of those medicines. In some cases, other topical applications (besides the warm bath) are required, to allay the irritation, arising from the excessive heat and itching of the skin. The most efficacious are, decoction of bran, the tar ointment, lime water mixed with oil, a solution of potass, and the acetite of ammonia much diluted. The metallic solutions are too powerful to be employed, except upon very particular occasions. Issues have been often employed in those cases, but experience has proved that purging answers better. Very distressing effects have followed the application of a blister where there was a tendency to chronic eruptions of the skin.

SECTION II.

Glandular Affections.

INFANTS and children are liable to swellings both of the external and the internal glands. The external ones most commonly affected are those of the neck or throat, and of the groins. Of the internal, the mesenteric are more frequently affected than any other.

When a smart feverish indisposition is followed by a considerable enlargement and swelling of the

glands on both sides of the jaw, which occasions a slight difficulty of swallowing, the disease is called the *mumps*. Generally the febrile symptoms abate when the swelling takes place, and this latter does not subside for several days. If, by exposure to cold, it suddenly ceases in males, a swelling at the lowest part of the belly follows.

There is reason to suppose the mumps to be contagious. It is, however, a harmless disease. Little else is required, than keeping the swelled parts warm by means of flannel, enjoying a vegetable diet, and directing a purgative to be given every third or fourth day. Frictions have never seemed useful, and have certainly, in some constitutions, proved most injurious.

A sudden swelling of one or more glands of the neck or throat, accompanied by increased heat, thirst, pain, and restlessness, often occurs during teething, or after exposure to cold, or where there is some irritation on the skin of the head, or neighbouring parts. In some instances it increases rapidly, its surface becomes red and shining, and it feels soft, as if matter were actually formed in it; and, notwithstanding all these appearances, suppuration does not follow. In other cases, the skin breaks, and the progress is that of a superficial boil.

Those swellings are not to be regarded as scrofulous, even where the child has a hereditary tendency to that disease. A few doses of brisk purgatives, and an emollient poultice to allay pain,

are the best prescriptions. Some parents object to the latter means as contributing to occasion humour, as it is termed, but experience has now proved, that the timely application of a warm bread and milk poultice, more certainly, on many occasions, checks the progress of inflammation, than any of the astringent solutions formerly in such general use.

Scrofulous swellings of the glands commonly begin gradually and imperceptibly, advance slowly, and, for a long time, are not painful even to the touch. After a certain period they evidently contain a fluid, but this is formed without any of the circumstances which usually attend suppuration. The skin (where the natural progress is allowed to go on) grows thin, and becomes discoloured and ulcerated, a sanious or ill-conditioned discharge follows, and when the glands do heal up, which often is not till after a long time, ugly scars remain. In many cases, such swellings afford the first evidences of the tendency of the individual to scrofulous complaints. But sometimes thickness and tenderness of the eye-lids, swelling of the upper lip, and enlargement of the belly, take place before any swelling of the glands appears. The complications of this disorder are so numerous and so various, that a particular detail of them, with an explanation of the treatment, would fill a volume. A few hints are all that can be offered in this work.

The progress of scrofula, when it has once be-

gun in any individual, is always most uncertain. The skin, the ligaments, and the bones, may become successively affected. Sometimes soft circumscribed swellings of the skin, evidently containing fluid, suddenly arise in different parts, especially about the shoulders or extremities. In some instances these subside as rapidly as they had occurred, and one or more of the joints become affected, or violent cough with hectic fever, or dropsical affection of the belly, take place. Sometimes several little hard lumps, which occasion no pain, are seen on the skin. These gradually increase in size, grow soft and discoloured, and at last suppurate. In many cases different modifications of the disease occur successively in the same individual, and undermine the health. It very often happens, too, that scrofulous sores which had resisted for years every plan of treatment, heal up spontaneously at the period of puberty. Much danger is always to be apprehended where the hip-joint or knee are diseased, but large pieces of the bones are frequently affected without destroying life.

On the nature of scrofula much has been written, though very little that is satisfactory has been ascertained. That the tendency to the disease is, in general, derived from the parents, is an unpleasant truth, which medical men are sometimes unwilling to state. But that scrofulous affections can never happen unless there be some hereditary taint, has been assumed perhaps on

too slight grounds. Every practitioner must have met with cases where long protracted low fever has induced a liability to such complaints, where not only there had not been previously any marks of a scrofulous constitution in the individual, but also where the parents had not the most trifling appearance of that disease.

Some isolated facts, established on the evidence of practitioners of the first respectability,* seem to prove, that the tendency may pass over one generation and be communicated to the next. This circumstance, on the first view rather contrary to the ordinary course of nature, may be easily reconciled with the opinion, that sometimes scrofula is an acquired disease. The tendency (or in technical language, the predisposition) to disease, consists in a certain condition of the corporeal structure, and this peculiarity may be transmitted from one generation to another, for successive ages. This tendency may, from a variety of circumstances, remain dormant in one generation and be acted upon in the succeeding one. The corporeal structure on which it depends must, however, be the same in all; and, in general, in the case of scrofula, there are certain external characters by which this may be distinguished in

* Treatise on Scrofula, by James Russell, Fellow of the Royal College of Surgeons, and Professor of Clinical Surgery in the University of Edinburgh.

any individual. But if the children of parents, who not only never had any scrofulous affection, but who had none of the ordinary marks of predisposition to that disease, are occasionally found to have scrofula after some severe illness, which had greatly reduced their strength, there can be no doubt that hereditary tendency is not absolutely essential to its production. This question relates to a subject of the greatest importance, because it must influence the practice in regard both to the prevention and the cure.

When the deplorable consequences of this malady are considered, it must be unnecessary to state any arguments to shew the duty of attending to its first approaches, but it may be remarked, that if this rule were invariably observed, the health or life of many individuals would be annually saved. On this account the most trifling mark of indisposition in children who have any appearance of a scrofulous constitution, should be anxiously watched, and, if possible, counteracted immediately. Affections of the stomach and digestive organs are usually, in such individuals, the first approaches to the disease. They most commonly happen after cold damp weather, or after some accidental indisposition. An emetic, and two or three doses of an active purgative are to be premised, the lightest and most nourishing diet is to be recommended, all risk of exposure to cold and damp is to be avoided, a course of tonics is to be prescribed, and, where circumstances will

permit, sea-bathing, and residence in the country in a dry situation, as soon as the weather is favourable, are to be advised. Preparations of zinc or iron are excellent tonics in many cases, but in others Spilsbury's drops have certainly been found superior to any other medicine. These drops are to be continued for at least two months at a time.

If, notwithstanding these means, scrofulous affections actually appear, some preparation of antimony, in very small doses, or of neutral salts dissolved in water, should be suggested. The former of those are to be employed in infants and the latter in children, especially towards the age of puberty. The neglected remedy of the polychrest salt merits, according to the Author's experience, a decided preference to every other saline preparation. A small dose of Sorotrine Aloes or of Turkey Rhubarb should be given at bed-time, and such a dose of the salt early in the morning, as shall procure three or four loose motions. This is to be continued for weeks, or for months, and it will be found, that instead of weakening the patient, it improves the strength, and alters very materially the appearance of the swellings or sores. After six or eight weeks the sulphate of iron may be given once or twice a-day without interrupting the course of the salts.

The Peruvian bark is proper only where there are considerable discharges from the sores, or a

threatening of hectic fever ; and in such cases the myrrh, combined with preparations of iron, seems more useful. The muriate of lime has been found of the greatest utility in many very obstinate cases.—In the former editions of this work the Author could not recommend this medicine from his own experience, but he now can add his impartial testimony in favour of its efficacy. In some cases of alarming complications of this disease a cautious trial has been made of the fox-glove, and of arsenic. The former has apparently done good, but the latter did not seem to produce any amelioration, either on the general health or on the local affection ; while it impaired the appetite and powers of digestion. Perhaps this might have been owing to the form, which was that of Fowler's tasteless ague drops.

Scrofulous swellings and sores require more attention than is usually paid to them ; not that attempts to discuss or to heal them should be hazarded till the operation of the remedies adapted to the general habit be obvious. But, after this is ascertained, no delay can be allowed. In the usual treatment of the local affections, it has long appeared to the Author that surgeons use too indiscriminately cold astringent applications, and much too sparingly the scalpel. That cold water or sea-water, or solutions of metallic astringents, are often proper, cannot be questioned. But in many cases of extensive swelling,

with great hardness, the hemlock poultice, renewed every twelve hours, has a most powerful effect.

Popular prejudices prevail against any operation for giving a free outlet to the matter when a fluctuation is perceived in the swelling; and to this prejudice surgeons have in general yielded too implicitly. If this subject be considered calmly, it will appear, that stagnant fluid must irritate materially the parts within which it is contained, and that the process by which a natural vent is occasioned, must be accompanied with a considerable loss of substance. These two circumstances combined, are the chief causes of the ugly scars which follow the healing up of scrofulous sores. It is not however on speculative principles that the Author often deems it necessary to recommend opening scrofulous swellings; for he has found by experience, that in many cases, by this practice, almost all mark has been prevented. It is impossible in this work to point out with accuracy the precise circumstances which should induce the practitioner to have recourse to an operation.

Another modern deviation from the ancient practice which seems to have been carried too far, is, the applying to scrofulous sores nothing else than superficial dressings; for, in many instances, some gently stimulating substance, introduced daily into the cavity of the sore, excites new actions on its surface, and thereby not only pre-

vents any disease spreading into the neighbouring parts, but also contributes to the healing up of the original sore.

Swelling of the *mesenteric* glands is indicated by enlargement of the belly, emaciation and dryness of the skin, want of appetite and indigestion, with unnatural stools and milky-like urine. Where it occurs in infants, occasional vomiting, an almost perpetual fretting, a kind of uneasy pressure in breathing, and gradual wasting of the flesh, are the symptoms. In children hectic fever soon follows the complaints already enumerated. In both cases the disease, though sometimes protracted for several months, most generally proves fatal. After death it is found that the mesenteric glands are enlarged and thickened, in some instances in a state of actual suppuration, and in others containing a soft substance like new cheese, quite different from real purulent matter.

This disease certainly happens most frequently in children of a scrofulous constitution, but the real pus found within the glands, in many instances, affords strong proof, that it may take place in children of every different habit. The exciting causes commonly enumerated are, irregularities of diet, inattention to cleanliness, exposure to damp and cold, and indigestion; to which should be added, the torpor of the lymphatic system, that so often follows febrile and inflammatory complaints.

When the disease is discovered in its incipient

state, it may be cured by means of a light nourishing diet, small doses of some proportion of antimony, immersion for ten minutes in the warm bath every night before being put to bed, and opiate friction applied over the belly evening and morning. Sea water should be used for the bath, and anodyne balsam, or a mixture of one part of the compound spirit of ammonia, two parts of fine oil, and three parts of laudanum, form the proper opiate friction. In some cases after the hectic symptoms had appeared for several weeks this plan has succeeded.

SECTION III.

Croup.

ALTHOUGH the *Croup* has certainly prevailed in this city and its neighbourhood from time immemorial, the first accurate description of it was published by Dr. Francis Home about fifty-five years ago. It occurs most frequently during winter and spring; but it is found to take place at any season of the year, when damp cold easterly winds prevail. It may be said to be peculiar to marshy countries, and those situated in the neighbourhood of the sea, so that in the inland and dry situations of this island it is quite unknown.

The true croup is preceded commonly for

some days, and always for a day or two, by a hoarse cough ; but the first symptom that proves alarming to one unacquainted with the disease, is a difficulty of breathing, which comes on towards night. The breathing is very difficult, and in many instances so noisy that it can be heard at the distance of several yards. After this state of the breathing is observed, the fits of coughing become more frequent, and have a very peculiar sound, resembling the loud crowing of a rousy cock. Generally the coughing occurs in redoubled fits, the second fit being more violent than the first. Some viscid phlegm is forced up by the cough ; but it reaches no farther than the mouth ; being retracted when the cough ceases.

If the countenance of the child be examined at this time, it will be found flushed and swelled, in a degree proportioned to the constitution of the individual ; consequently, in some cases the eyes appear bloodshot, watery, and swelled as it were, and the whole face is very red, except that round the mouth there is an evident whiteness ; but in other cases there are only watery eyes, and an obscure blush over the face, with a slight paleness round the mouth.

The child sleeps during the intervals between the fits of coughing ; but there is no material alteration in the state of breathing while he is asleep. Those in whom the face is very much flushed seem overpowered by a heavy sleep, from which they are roused only by the violent fits of

coughing. Food and drink are readily swallowed without difficulty, and the natural evacuations go on as usual.

In proportion as the disease continues, the fits of coughing return more frequently, and are attended with an uncommon degree of agitation throughout the whole frame; and in some cases the breathing becomes more and more noisy. In one case which the Author attended some time ago, convulsions or convulsive startings followed every fit of coughing.—At last the appearance of the countenance changes, the lips growing livid, the pallidness round the mouth becoming more striking, and the whole face turning of a leaden hue. Where the event proves fatal, it commonly seems occasioned by a fit of suffocation; and this often happens quite unexpectedly to the attendants.

During the whole course of the disease the child is extremely fretful; but when irritated, he seldom cries for any length of time. This appears to arise partly from the uneasiness in breathing being aggravated by the fits of crying, and partly from his being unable to direct his attention to any object whatever above a few minutes at a time.

The progress of the disease is very different in different cases, for it sometimes runs through its course in twenty-four hours, and sometimes it is protracted even to the tenth day. The progress

seems to correspond with the frequency and violence of the fits of coughing.

When a child recovers from this disease, it continues for some time extremely liable to a return of the disorder ; and if a second attack should occur within a few days from the cessation of the former, there is very great risk of its proving suddenly and rapidly fatal.

The true croup occurs only during cold damp weather, except in marshy places, where it is apt to happen at any time when a foggy state of the atmosphere prevails. The ordinary subjects of the disease are those children who have enjoyed the best health ; and the most common period of life at which it takes place, is from the fifth month to the fifth or sixth year.

Inflammation of the membrane which lines the windpipe is the immediate cause of this disease. In consequence of this, matter is formed, which concretes and chokes up the passage to the lungs. This concreted matter has been on some rare occasions, thrown off by vomiting, and has relieved the child from threatening suffocation.—Some practitioners have supposed the disease to be contagious, because two or three children in the same family have fallen victims to it within a few days. They have overlooked, that in such cases all the children had been exposed to the same exciting cause, viz. a damp and cold state of the atmosphere. The proof that this is the sole ex-

citing cause is, that the disease never occurs in any other condition of the air; and it is a curious and instructive fact, that in proportion to the dampness of the atmosphere, is the violence of the disease. Thus, in Leith it is more severe than in Edinburgh; and in some marshy districts it is much more violent than in Leith.

There is an affection resembling this disease which may be styled *spurious croup*, and which is very analogous to the asthma of grown people. It comes on suddenly, without any previous indisposition, in the form of very difficult breathing, occasioning fits of croupy coughing, unaccompanied with the appearance of tough phlegm in the throat or mouth. The countenance is little altered during this affection; and during the fits of coughing there is not that excessive agitation which is so strongly marked in the true croup.

Spurious croup affects delicate, much more frequently than robust children, and occurs during any state of the weather. Its duration is in general limited to a few hours; and in many instances it ceases entirely for many hours, or even for a day or two, and then recurs, so that a child may have several attacks within a short time. There can be no doubt that the spurious croup has on some very rare occasions proved fatal; but in general it is unattended with danger. It seems to arise from a spasmodic affection of the wind-pipe. As it is extremely difficult in some cases

to distinguish, at the beginning, the true from the spurious croup, it is a fortunate circumstance, that the following method of treatment is applicable to both diseases.

Immediately upon the attack, the child must be put into a tub of water, heated to the ninety-sixth or ninety-eighth degree of Fahrenheit's thermometer, (that is, to the degree which the hand immersed in it can easily bear), or must be wrapped up in a blanket wrung out of hot water. Whether the bath or the fomentation be employed, it ought to be continued for at least ten minutes; and then the child should be carefully rubbed dry, wrapped up in warm flannel, and put to bed.

A dose of calomel is now to be given, and repeated every hour till the breathing be evidently relieved; when it is to be gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according to the state of symptoms. This medicine commonly occasions both vomiting and purging; and in true croup, the first alleviation of symptoms generally follows the discharge of a great quantity of dark green-coloured matter (like boiled spinage) by stool. But if the attack have been that of spurious croup, the breathlessness ceases after vomiting has occurred, in which case that medicine is to be instantly discontinued.

If the disease by its obstinacy evidently prove

to be the true croup, in all cases where the symptoms are violent, bleeding either from the jugular vein, or by means of a great number of leeches, and the application of a blister to the breast, are to be had recourse to, and the calomel is to be persevered in.

The dose of calomel is to be regulated principally by the age of the little patient. During the first year it should be from one to two grains; during the second, two grains and an half; during the third and fourth years, from three to four grains; and during the fifth and sixth, from four to five grains. It may be given mixed with a little sugar as a dry powder, or it may be mixed with currant jelly, or honey, or treacle, or pottage, or panada, or light pudding, or with any thing which is thick: but it cannot be given in drink.

During the course of the disease, nothing else than liquids ought to be allowed to the child. These should consist of cow milk whey, very weak tea, thin barley gruel, fig tea, apple tea, milk and water, or toast and water. It may be unnecessary to remark, that if the infant be not weaned, nothing but the nurse's milk should be given. The room in which the little sufferer is placed ought to be kept moderately warm.

When the disease has begun to yield to this treatment, nourishment suited to the habits and circumstances of the infant is to be exhibited in

small quantities, and often repeated. In some cases considerable weakness remains after the crouping has ceased, in consequence partly of the violence of the symptoms, and partly of the operation of the calomel. Under such circumstances, cordials, particularly weak white wine whey, and a blister, to the breast become necessary. But if proper attention have been paid to the precaution of lessening the number of doses of calomel, whenever the disease is in the least alleviated, the ordinary health of the child will be found restored within a very short time after the symptoms of croup have disappeared.—At first the Author was unwilling to sanction this plan, having in the early part of his professional life seen cases treated in this manner prove rapidly fatal. He was at last however, about eighteen years ago, induced to give it a fair trial, at the recommendation of an old pupil, now dead, and was surprised and gratified by the result of the practice. He had reason indeed to be convinced, that the practitioner alluded to had employed it by mistake in cases of spurious croup only, for he had asserted that it cured the disease, though repeated not more frequently than evening and morning, and though it produced no sensible operation.—The Author found, by exhibiting it in the manner described, that it rendered blood-letting unnecessary, and it seemed so very successful, that in the course of twelve

years, it failed in no more than three cases, and in these instances it had no effect whatever on the bowels.

It would be uncandid to conceal, that more extensive experience, has now led the Author to believe, that the calomel alone, is only useful in those mild degrees, which usually prevail in this city ; and that in all violent cases, bleeding ought to be had recourse to, and to be repeated according to circumstances, and that the calomel should then be employed as an auxiliary.

SECTION IV.

Measles.

A REGULAR history of *measles* would be misplaced in this work, and therefore the following observations are limited to two points, which are certainly of the utmost importance, viz. to the method of distinguishing this disease from every other, and to that of treating it when it occurs in infants and children. On those subjects, it is believed, some most erroneous opinions are entertained by general medical practitioners.

It has been already stated, that from the extreme delicacy of the skin which prevails during the first two or three years of life, eruptions, resembling the measles, attend many of the accidental feverish or catarrhal complaints of infants

and children. This alone has given rise to the popular notion, that measles may affect the same individual oftener than once, for there is no authentic evidence in support of such a fact. It has indeed been alleged, that measles may occur without fever, but this is an absolute contradiction in terms. All medical men having, in modern times, agreed to call a certain eruptive fever by this name, nothing can be more absurd, than to apply the same name to an eruption without fever. As it frequently happens, however, that in infants and young children, eruptions like the measles are at first attended with fever, it is only by examining with care their progress and duration, that an accurate distinction can be made.

The colour of the eruption in measles is at first that of raspberries; at the end of the second day from its extending over the whole surface, it changes to a brownish red, which continues distinct during the third day; and after that time it gradually turns pale, and the skin becomes covered with branny scales like fine oat-meal. When, along with this regular progress, there is catarrhal fever, with an affection of the eyes and nose, there can be little doubt respecting the nature of the disease, but wherever there is any material deviation from this succession of changes, it should be concluded that it is not a case of measles.

When, from the prevalence of this disorder in any particular place, (and it generally appears as

an epidemic every year in large cities), there is reason to suspect that symptoms of indisposition in any individual mark its approach, the stomach and bowels should be immediately cleared out, by means of an emetic and a purgative, after which the child should be put into the warm bath. It is a vulgar prejudice, that a heated apartment is necessary during the course of the disease, for nothing adds more to the oppression, and consequently to the danger of the child. Exposure to a cold stream of air might increase the inflammatory affection in the lungs, which, in a certain degree, occurs in this complaint, but a moderate temperature of the atmosphere by which the patient is surrounded, tends to permit the eruption to come out freely, and to lessen the feverish irritation.

Plentiful dilution by means of barley-water acidulated, or cow milk whey, or apple-tea, or any of the ordinary acescent drinks, and an open state of the bowels, are necessary as long as the eruption continues distinctly visible. If the cough and oppression of breathing be urgent notwithstanding this treatment, a more active purgative is to be given, and a blister is to be applied to the chest. If there be sense of tightness in the forehead, and sense of roughness in the throat, the frequent inhaling of the steams of hot water affords very immediate relief.

On the declension of the eruption the skin should be sponged two or three times a-day with warm milk and water, and a powerful laxative should

be directed every third or fourth morning. As soon as the state of the cough will permit, nourishing diet, with wine and tonics, of which a combination of myrrh and bark is the preferable, are to be allowed. Violent or very frequent fits of coughing, with wheezing or considerable oppression in the chest, require a succession of blisters, repeated purgatives, and a milk diet; but a short dry cough, even though accompanied with frequency of pulse, yields to the use of tonics.

If quick or laborious breathing, with a rapid or thready pulse, and a torpid drowsy state, with a swelled or pasty appearance of the countenance, supervene on the decline of the eruption, opiates, wine, and other cordials, with blisters and external stimulants, afford the only chance of saving life.

To these short practical hints must be added, the unpleasant duty of pointing out the errors frequently committed in the treatment of this disease, a task, on which no other consideration could have induced the Author to enter, than the conviction, that many infants and children are lost by such errors.

The first of these, to be noticed, is the indiscriminate practice of blood-letting. Practitioners have been led to this, partly by the theoretical notion that there is danger of pneumonic inflammation, and partly by the success which attends it in grown people. But what according to the experience of every unprejudiced practi-

tioner is most to be dreaded as the effect of measles in children, is the debility that follows ; and, accordingly, numerous instances have fallen under the Author's observation, where hectic fever, or dropsical or scrofulous affections were induced by bleeding. For a long time, therefore, he was accustomed to state, in lecturing on this subject, that " he did not deny the possibility of blood-letting being necessary in the treatment of this disease, but that he had never yet met with an instance where he found it so."—The late Dr. Erskine, whose talents and candour it is unnecessary to detail, first pointed out a case where that necessity was well marked, and since that time the Author has seen a very few instances where he had no hesitation in sanctioning blood-letting.—The opinion thus expressed, of the bad effects of bleeding indiscriminately in this disease, is supported by the high authority of Dr. Parr of Exeter.—In allusion to the possible propriety of that evacuation, he says, " no such instance has, however, occurred to us in an extensive practice, nor to those from whom we learned it, whose practice, equally long, has been more extensive." *—Had this flattering testimony related to a subject of mere speculation, it should not have been quoted in this work ; but when he considers the importance of the question, and the reluctance with

* Medical Dictionary, Vol. II, p. 210.

which many most respectable practitioners have been led to relinquish the established practice of bleeding, the Author feels highly gratified in being able to shew a coincidence, which could only be the result of experience.

In these modern times, the use of purgatives after the declension of the eruption, has been as much condemned as bleeding. Even Dr. Cullen has sanctioned this prejudice. The ancient opinion was, that purging tended to remove the dregs of the disease, which has been very justly ridiculed by Dr. Cullen; for the proper effect of purgatives in such cases is the removal of that torpor of the lymphatic system on which both dropsy and glandular swellings depend. Dr. Parr asserts, that if laxatives be steadily persevered in from the beginning, the peripneumonic symptoms which occur about the eight or tenth day, will certainly be prevented. The most alarming case of symptomatic dropsy in a child, to which the Author was ever called, was the effect of inattention to this practice.

As the debility which always attends, and follows measles, is the most prominent feature in the progress of the disease, it is not easy to understand the reasons why practitioners have been led to overlook so obvious a circumstance. The objections to wine and nourishing diet, which it is so often necessary to combat, probably arise from the supposition, that the frequency of the pulse and the cough are the effects of inflammation,

when, in fact, they are occasioned by the torpor of the lymphatics. If attention be paid to all the circumstances of the disease, this cannot appear doubtful to any unprejudiced inquirer. The aphthæ, the putrid diarrhœa, the dropsical and glandular affections, and the gangrene which is apt to take place on blistered parts, afford such unequivocal evidences of debility, that no other than a descendant of the renowned Sangrado himself could overlook them.

An anomalous feverish disorder, resembling at first the measles in every respect, is occasionally met with. Within about twenty-four hours from the eruption having come out, the feverish symptoms are highly aggravated, attended with delirium, startings, and even convulsions; and on several parts of the skin, particularly on the face, the eruption recedes, leaving large portions of the surface of a pale yellow, with a small white blister or vesication in the middle. The eruption disappears in a day or two, and, under proper treatment, the fever soon abates.

The alarming appearance of great determination to the head, in the first case or two of this kind to which the Author was called, led him to apply leeches to the temple, at the same time that he prescribed the warm bath, a brisk laxative, and a blister to the back. Since that time he has omitted the leeches; and although the utmost danger seemed to threaten in all the cases he has

witnessed, the recovery has been rapid in every instance.

SECTION V.

Scarlet Fever and Sore Throat.

THIS very infectious disease is now so well known, that a regular description of it is unnecessary; all that seems proper in this work being a very few observations on the method of treatment in infants and children.

However slight the symptoms may seem, if the eruption on the surface, and the appearance of the tongue and throat, prove the disease to be really *scarlet fever*, every proper precaution ought instantly to be adopted, to prevent the spreading of the infection, as the violence of the disorder differs in individuals exposed to the same degree of infection.

At the beginning, an emetic, though it does not cut short the progress, as some fanciful physicians have supposed, certainly alleviates the sufferings, and can never be injurious.—If the heat of the skin be excessive, sponging it frequently with cold water,—or with a mixture of cold water and vinegar, tends greatly to abate the fever, and to promote rest.—It is a much safer practice than what has been technically called cold effusion, viz.

pouring a quantity of cold water on the naked body, because several instances have occurred, where breathlessness, with sudden sinking of the living powers, have quickly followed the use of that remedy.—That in many cases no injury has followed, and that the progress of the *scarlet fever* has often seemed to be instantly, as it were, arrested by the cold effusion, may be satisfactorily explained ; for it is probable, that in the majority of cases, where *scarlet fever* occurs independent of an affection of the throat, the disease, if left entirely to nature, would prove slight and transitory. It is a safe rule in the treatment of diseases, to consider one positive fact to be of more value, in elucidating the appropriate means, than a hundred negative ones.—Thus, if in one case of a hundred, the cold effusion produce decidedly mortal effects, it is not unreasonable to conclude, that in the other cases it had had no influence whatever on the disease.—In no instance within the Author's knowledge, has any bad consequence followed the cold aspergion.

If considerable fever, with pain of the head, or flushed face, or slight delirium, attend at the beginning, the application of leeches to the temples is indispensable. This was formerly practised in every case whatever ; and the bad effects of its indiscriminate use led, several years ago, the most judicious of the profession here, to discontinue it.—That bleeding in many cases is most injurious, is now ascertained beyond the possibility of doubt ;

but that cases now and then occur, where it contributes to the mitigation of the symptoms, and eventually to the safety of the patient, the Author is convinced from much experience.—He admits, that it is often very difficult to decide on the propriety of the practice, and he has occasionally seen the most experienced of the profession puzzled on this point.

While there is no affection of the throat, the skin on the declension of the eruption should be sponged every six or eight hours, with warm milk and water, and the bowels ought to be kept open, by means of laxatives, while wine, and suitable nourishment, are still to be continued.—Spontaneous looseness seldom proves troublesome or injurious, unless where the state of the bowels had been neglected at first.

In those violent degrees of *scarlet fever*, which are attended with an affection of the throat, the great obstacles to success are, the impossibility of getting the throat properly and frequently gargled, and the excessive reluctance to take the cordials which the urgency of the symptoms require.—For these reasons, it often happens, that all that can be done during the dangerous period of the disease, is to regulate the ventilation, and to apply a succession of external stimulants.—Bark glysters where they can be given, without occasioning fatigue, from the struggles of the child, ought to be frequently exhibited.—But if the child can be persuaded to take wine, or other cor-

dials, in the proportion required, which varies according to the severity of the disease, the best chance is afforded of a successful event.—In a great school in Yorkshire, where the head master, Dr. Binns, had been formerly a practising physician, it was found that children under fifteen years of age, affected with this disease, required sometimes not only a bottle of port wine, and another of raisin, but also some brandy in addition every twenty-four hours.

On the steady use of purgatives, the prevention of glandular diseases, and of dropsical affections chiefly depends.—A swelling of one or more glands of the neck is apt to appear, when the sloughing of the throat is nearly completed ; and a fluid as if from suppuration, is soon perceivable in it.—But this is generally dispersed, after one or two doses of rhubarb and jalap, or powdered senna and jalap.—In some cases where croup had supervened to this disease, a combination of wine, cordials, opiates, and blisters, with large doses of purgatives, repeated every hour, till relief was procured, seemed to save life,—though several instances have also fallen under the Author's notice, where the fatal event suddenly followed the recurrence of that symptom.

SECTION VI.

Water in the Head, and other Dropsical Affections.

UNDER the title of *water in the head*, three diseases, different from each other in their nature, although similar in one respect, have been generally comprehended.

The first is an affection of the head, coëval with birth, which may be styled the *congenite water in the head*. Of this disease the chief mark is, an evident enlargement of the head, with uncommon openness of its sutures, that is, of the connections between its bones. This is met with in various degrees; for sometimes the size of the head is so great, and the collection of water so enormous, that the infant cannot be born alive: in other cases, the enlargement is just perceptible, and at first seems to have little influence upon the health of the infant: and between these extremes every intermediate degree has occurred. In general, where the disease is quite evident at birth, the size of the head continues increasing for ten or twelve months; and then the child is destroyed by convulsions. But cases have occurred where life has been protracted for several years. Under such circumstances, the sufferer has dragged out a most miserable existence, having been incapable of any mental exertion, and also, in most instances, of any bodily exercise.

This disease seems to be owing to some original imperfection in the structure of the individual; and, as far as human experience had evinced, previous to the former editions of this work, had been found quite incurable. Blisters to the head, issues in different parts of the body, the various preparations of mercury, and other active means, had been often tried, without any appearance of even mitigating the symptoms.—But, within these few years, two instances have occurred, in which the disease has been arrested in its progress, by the use apparently of external stimulants applied to the head.—In both cases, the size of the head was pretty rapidly diminished, and in one at least the general health of the individual was restored.

The second disease known by this name, may be termed the *symptomatic water in the head*. It is the natural effect of any weakening disease in infancy or childhood, just as swelling of the feet and ancles take place in grown persons who are much debilitated.

In consequence of the large proportion of blood which circulates through the head of infants and children, every complaint which occasions any irregularity or inequality in the action of the heart and blood-vessels, produces an effusion of watery fluid into the cavities of the brain, more readily than in any other part of the body. The effect of this effusion is commonly stupor, and eventually convulsions. In this way, fevers, many

inflammatory complaints, and, in short, all diseases which are protracted for any length of time terminate ; and as it is found after death, that water is accumulated within the brain, superficial observers are apt to imagine, that what in fact is the effect of the previous indisposition, had been the original cause.

Symptomatic water in the head has been often cured by supporting the strength, and at the same time employing the more powerful remedies for dropsical affections. The means for both purposes ought to be exceedingly active, as there is generally no time for trifling.

The third disease known by this title has been usually called the *idiopathic water in the head*, and more often takes place in childhood than in infancy, although instances of its occurrence in the latter are occasionally met with.

When infants are afflicted with this disease, the first symptoms are commonly those of teething, after which a great degree of torpor, with obstinate costiveness, frequent startings, and in some cases convulsions, suddenly come on. The fatal event often follows with great rapidity, so that an infant who had been observed to be only a little indisposed, has been known to die of this disease within the course of three or four days.

In children, the approaches of this formidable complaint are more gradual and more insidious. Slight headach, or pain about the shoulders, at-

tended with languor, dulness of the eyes, and costiveness, with disturbed sleep, now and then take place for many weeks, often while the general health does not appear affected ; so that the first circumstance which alarms the attendants in many cases, is an aggravation of the headach, accompanied by sickness and constipation, or frequent screaming during the night, as if from being awakened by a frightful dream, or irregular feverish symptoms, with considerable dilatation of the pupils of the eyes, and occasional squinting.

Soon after this, the pulse in most cases becomes evidently affected, being either unusually slow or intermitting. The child now complains almost constantly of pain in the head, commonly confined to one part, and of intolerance of light, and has also frequent retching, and most obstinate constipation. In a few days the inequality of the pulse ceases, and is succeeded by great frequency and feebleness ; the appetite for food returns, in-somuch, that whatever is offered is greedily swallowed ; the pupils of the eyes are more and more dilated, and the vision proportionally impaired, till at last double vision, and finally blindness ensue. Stupor, with stertorous breathing and horrible screamings follow, and are terminated by convulsions, which soon destroy the child. The progress and combination of these symptoms are very different in different cases. Sometimes the

disease has proved fatal in the course of a few weeks, and sometimes it has been protracted for several months.

It is often extremely difficult to distinguish this disease, for many of the symptoms resemble those occasioned by worms, or by irregular fevers.—In every case, there are excessive torpor of the bowels, with irregularity of the pulse ; but as such symptoms are occasionally the effects of some disorder of the parts concerned in digestion, they cannot be regarded as characteristic marks ; and, accordingly, every candid practitioner must allow, that the precise nature of the indisposition in many instances is only manifested by the progress or event.

Whether an increased determination of blood to the head be the chief cause of this disease, or be a link in the chain of causes, the observations of several most respectable practitioners concur in proving that it precedes the alarming symptoms. As this is often the effect of very slight injuries from falls or blows, parents, and those who have the charge of children, ought to attend most particularly to every accident of that kind, however trifling it may appear at the time to be. —The application of leeches to the temples, opening the bowels by some cooling medicine, and keeping the child upon a milk and vegetable diet for some days, can almost never do any harm, and may often prevent the most serious complaints.

In the course of the Author's practice, he has seen several very well marked instances where the disease could be traced to such accidents.

In the treatment of idiopathic water in the head, the most active means ought to be employed as early as possible; for after a certain time the disease is quite incurable. Bleeding, blistering, preparations of antimony with powerful purgatives, and in some cases the foxglove, are severally necessary.—When parents have unfortunately lost one or two children in consequence of this disease, it was formerly customary to direct, as a precautionary measure, that every future infant should have, during the period of teething, an issue established on the head or back. But an occasional succession of blisters seems a preferable practice.

Dropsical affections of the skin of the belly, or of the chest, are apt to occur in infants and children, after any violent or protracted indisposition, but particularly after measles or scarlet fever. In these latter cases, they may be commonly prevented by attention to the use of purgatives and tonics, as already recommended.—Slight degrees of dropsy may be removed by a brisk laxative, followed by a dose, three or four times a-day, of the dulcified spirit of nitre, and nourishing diet. In the more alarming degrees, the foxglove, in the form of the saturated tincture diluted, repeated every hour till it take effect, has been found particularly successful. It may seem very

unnecessary to remark that a remedy of such deleterious qualities ought never to be continued longer than necessity absolutely requires.

SECTION VII.

Hooping-Cough.

THE *Hooping-Cough*, or what is called in Scotland the chincough or kinkcough, begins like a common cold, attended in some cases with fever, though frequently with little derangement of the system. By degrees the symptoms of cold cease, but the cough continues, and is accompanied with circumstances which mark its nature. These are, the suddenness of the fits of coughing; the great agitation the child feels during the cough, which leads him, at the instant it comes on, to lay hold of what is nearest in order to support himself, the coughing being excited by emotions of the mind, and by any considerable exertion, and each fit of cough ending in vomiting or in hooping (called also back-draught) which resembles threatening suffocation, and seems to arise from a convulsive action of the upper part of the windpipe, while there is an irresistible necessity for taking in a full inspiration.

In the favourable cases of this disease there is no fever, no diminution of the appetite for food, no apparent deviation from the ordinary health;

and the fits of coughing occur only twice or thrice during the night, and during the day take place commonly after a full meal, or violent exercise, or emotions of the mind. If hooping follow the cough, it is in a very trifling degree.

But in the unfavourable cases, great fever and weakness, or feverish heat, with evident determination to the head, occur at the commencement of the disease, accompanied with various symptoms of derangement, according to the constitution of the individual. The fits of coughing are very frequent, of long continuance, sometimes preceded but more often followed by breathlessness always ending in the ejection of a quantity of tough phlegm, or sulphur-coloured defluxion, and occasionally by discharges of blood from the nose or from the bowels. The hooping in such cases renders the face quite livid, and not unfrequently terminates in convulsions or in faintings. It always seems to threaten instant suffocation.

Nothing is more uncertain than the duration and event of this disease. In the mildest form in which it occurs, it generally continues for two or three months; and often, after it has apparently ceased, an accidental exposure to cold occasions a return and an aggravation of the symptoms.—In the violent degrees, many months elapse before the disorder seems to be mitigated; and the return to strength, where the child reco-

vers, is very tardy. It is almost impossible in any case to foretel with certainty the event; for in many instances the child has been suddenly carried off, after it had for several days, or even weeks, had the most complete mitigation of all the symptoms; while, in other cases, every circumstance which commonly indicates approaching death, has been observed for a considerable time, and yet the child has eventually struggled through. Where the fatal event takes place, it is in consequence either of exhaustion, in which case the feet are commonly much swelled for some time before death, or of a fit of suffocation, or of a convulsion.—Some estimate of the danger may be formed by attending to the age, constitution, and symptoms of the patient, and the season of the year. Experience proves, too, that it is more fatal in some years than in others.

The hooping-cough occurs only once during the life of the individual; but in some children, even for years after it has ceased, every common cold is attended by a cough which seems somewhat like the hooping-cough. During teething, too, there is sometimes, as has been already mentioned, a kind of crowing, which, to a superficial observer, seems to resemble the back-draught.—Infants and children of every age and constitution are liable to this disease: and, contrary to what happens with respect to other infectious diseases, the youngest infant is as subject to it as the oldest child.

There can be no doubt that the exciting cause of the hooping-cough is a contagious matter, which, although so subtle as to elude the cognizance of the senses, may nevertheless be conveyed from one child to another at a very considerable distance, through the medium of a third person. Infants a few days after birth, have become affected with this disease, in consequence of being handled by those who had been in a house where the hooping-cough was prevailing. It was formerly believed, that after the original cause had ceased to have effect, the disease might be continued merely from habit ; but this opinion must be erroneous, for while the cough lasts the infant is apt to infect others.

In the treatment of the hooping-cough, the great objects to be aimed at are, to moderate the violence of the cough, to restore or support strength, and to palliate troublesome or alarming symptoms.

For accomplishing the first of the above purposes, vomits repeated daily, or oftener, according to the exigency of the case, and frequent change of air, are to be chiefly trusted. It may be known when the air disagrees, by observing that the child is more and more fretful and restless during the night ; and on this account, in many cases it is found necessary to change the residence weekly. The younger the child is, the more are vomits required, so that it is often ne-

cessary to give one, evening and morning, for weeks together.

The strength is to be supported by suitable nourishment. Where inflammatory symptoms attend at the beginning, the diet should consist almost entirely of milk and vegetables; but when much debility takes place, animal food in various forms, and cordials adapted to the age and constitution, are indispensable. The Peruvian bark is in many of those cases extremely useful. It may be given mixed with a solution of extract of liquorice.

In general, the chief alarming or troublesome symptoms which require palliation, are the inflammatory and feverish affections, and the whooping.—The inflammatory symptoms, excepting when very violent, are best moderated by regulation of diet and by keeping the bowels open. On some rare occasions, bleeding must be had recourse to; but it requires much discernment to judge of this, and irreparable mischief may be done by the subtraction of blood.—The feverish symptoms are mitigated by frequent ablution with tepid water, by the use of emetics, and by change of air. When they are attended with great debility, cordials and occasional blisters must be employed.

The most formidable symptom of this disease is the whooping, as it always, when violent, threatens immediate death.—Where it is not alleviated

by the means already recommended, particularly by frequent emetics and change of air, stimulant substances must be rubbed over the ribs, or breast, or belly, evening and morning. The rectified oil of amber answers for this purpose very well. Roche's royal embrocation is used with the same intention. Garlic ointment, rubbed on the soles of the feet, seems particularly efficacious, where uneasiness in breathing continues during the intervals between the fits of coughing. Narcotic medicines, given internally, such as the hemlock and henbane, are sometimes useful in lessening the violence and frequency of the hooping, and are much preferable to any preparation of opium.

SECTION VIII.

Rickets.

THIS disease often begins during the cutting of the milk teeth, but in many cases it first appears between the second and the sixth year, after some febrile or protracted disorder which has been followed by great weakness.

When it occurs during infancy, the first symptoms are, paleness of the face, and a swelling of the belly, with flabbiness of the flesh, relaxed skin, and evident aversion to exercise. If these circumstances be disregarded, the head in a short

time becomes enlarged, spreading out towards the sides, and being flattened or depressed on the upper part, the back bone bends, and some of its joints project, the ribs sink in, while the breast bone is pushed out in the form of a ridge, and the larger joints swell.—Pasty complexion, voracious or irregular appetite for food, swelling of the belly, costiveness, or scanty evacuations by stool, and a hobbling or awkward manner of walking, mark the beginning of rickets in children.

The progress of the disease is very different in different cases. Sometimes, after the bones have become curved and the joints mis-shapen, the general health returns, and the only bad effect is more or less deformity. In other cases, hectic fever, accompanied by a short dry cough, occurs, and gradually destroys life. The more violent degrees are commonly complicated with scrofulous affections.—As there can be no difficulty in distinguishing the first approaches to rickets from every other complaint, if due attention be paid, and as it is a matter of the utmost importance to do so, the back bone and joints of puny infants or children ought to be examined from time to time with the most scrupulous care.

With respect to the nature of this disease, there can be no doubt that the softness of the bones is owing to their not being supplied with a sufficient proportion of the calcareous earth which forms their basis; but it has not yet been ascertained, whether the earth be not furnished by the system,

or whether, after having been separated from the food, it be dissolved in the fluids with which it is mixed, from their being in an unnatural state. That disordered action of the digestive organs always attends the commencement of rickets, is a fact of very material consequence to be kept in view.

There can be no doubt that this disorder is not exclusively confined to those who inherit a scrofulous tendency. It is well known, that impure air, inattention to cleanliness, irregularities of diet, and mismanagement of complaints of the bowels, have apparently excited it in individuals of every constitution.

The cure of this disease in its incipient stages, if not complicated with any modification of scrofula, may be accomplished by directing, in addition to the means already suggested, for cases of chronic indigestion, the cold bath (with salt water) every morning, and dry friction of the whole surface daily.—But if the advanced stage have occurred, besides a steady perseverance in varied purgatives till the stools become natural, warm bathing, opiate frictions and a course of tonics, are necessary. The opiate friction has seemed so efficacious, that in several cases, where the bones of the arms and legs had been actually bent before it was had recourse to, their natural shape was restored by it.

Foreign practitioners have extolled the powers of mercurials, joined with antiscorbutics, in cur-

ing rickets, and chemists have proposed, for the same purpose, medicines capable of completing or correcting those chemical changes in the animal fluids, on which they imagine the disease to depend. Experience has proved to the Author's conviction the inefficacy of the former, and, on every principle of fair reasoning, the latter must be rejected; for the object should be, not to supply materials, but to alter the actions of the powers by which the component parts of the animal fluids are selected or combined.

Where one or more joints of the back jut out, an issue on each side of them, or the use of Jones's collar, which is a steel bar so contrived as to take off the weight naturally supported by the spine, according to the state of the disease, have in many cases been successfully employed.—The late Mr. Baynton of Bristol recommended instead of those means, undeviating rest in the horizontal posture, continued for months or longer—and the Author's experience has fully confirmed all the observations of that gentleman, on the utility of the practice, where the subjects of the disease are under six years of age.—But it is his duty to add, that undeviating rest in the horizontal posture, is not alone sufficient for the cure, (which was Mr. Baynton's opinion), and that various assisting means, according to the constitution of the patient, the degree of the affection of the bones, the state of the general health, &c. are necessary.

Slight degrees of *rickets*, are apt to occur in young women, about the twelfth or thirteenth year, and require particular attention.

APPENDIX.

On the Method of measuring the Doses of Medicines.

LIQUID MEDICINES are commonly prescribed in the doses of table-spoonful, tea-spoonful, or drops. But an exact dose can never be given by those measures ; for table and tea-spoons are very various in size, and fluids poured from a phial fall out in large or small drops, according to the thickness of its edges, or to the quantity of its contents. On this account, a glass measure, both for drachms, ounces, &c. and for drops, ought to be used in every family in the country ; and in the following directions it is assumed that a table-spoonful contains half an ounce, and a tea-spoonful one drachm.

The doses of powders and electuaries should be ascertained by weight, for which purpose a set of apothecaries weights is to be employed.

Medicines for Infants and Children.

ABSORBENTS.

CALCINED MAGNESIA AND PREPARED CHALK.—Dose, from two to ten grains, mixed with any liquid.

LIME-WATER.—Dose, from one to three table-spoonsful.

ANODYNES.

LAUDANUM.—This medicine is to be employed with the greatest caution ; and should scarcely ever be given unless prescribed by a regular practitioner. Instances have occurred where it has proved fatal to infants : and in all cases it

is apt to disorder the stomach and bowels of children. Dose, from three to ten drops.

TINCTURE OF HYOSCYAMUS.—Dose, from ten to thirty drops.

ANODYNE EMBROCATION.—The tincture of soap with opium, commonly called anodyne balsam. From a tea-spoonful to a table-spoonful of this may be rubbed on the surface of the belly, or along the course of the spine, evening and morning; and in many cases it allays pain as effectually as laudanum administered internally, while it is always a safer means of relief.

ASTRINGENTS.

For Internal Use.

ASTRINGENT MIXTURE.—Take of

Best Turkey Rhubarb, twenty grains,

Prepared Chalk, one drachm,

Powder of Opium and Ipecacuan, (formerly called Dover's Powder), ten grains,

Simple Cinnamon Water, half an ounce,

Spring Water, two ounces and an half.

Mix carefully.

Dose, from one to four tea-spoonsful every six hours. This is found particularly useful in some cases of habitual looseness.

STRONGER ASTRINGENT MIXTURE.—Take of

Electuary of Catechu, two drachms,

Prepared Chalk, half an ounce,

Simple Cinnamon Water, one ounce,

Spring Water, five ounces.—Mix.

Dose, from two tea-spoonsful to a table-spoonful every three or four hours. This may be rendered still more powerful in checking debilitating looseness by the addition of a small proportion of laudanum to each dose.

For External Use.

SOLUTION OF SUGAR OF LEAD.—Dissolve one drachm of Sugar of Lead in an English pint of spring water. This

may be made still more powerful by the addition of two ounces of distilled Vinegar. It is chiefly useful in swellings and inflammations from sprains, blows, &c.

WEAK ASTRINGENT LOTION.—Dissolve half a drachm of White Vitriol (Sulphate of Zinc) in an English pint of rose water. This is to be employed evening and morning whenever any part of the skin of infants appears tender.

CARMINATIVES.

ANISE SUGAR.—Dose, two grains.

SIMPLE (commonly called Barley) CINNAMON WATER.—Dose, from one to two tea-spoonsful.

ESSENCE OF PEPPERMINT.—Dose, from one to three drops.

DALBY'S CARMINATIVE.—Dose, from five to thirty drops.

CORDIALS.

BARLEY CINNAMON WATER.—Dose, as above.

WHITE WINE WHEY.—Dose, within the twenty-four hours, from one to two glassesful of sherry wine made into whey, for infants.

CORDIAL MIXTURE.—Take of

Ammoniated Aromatic Tincture, half a drachm,

Simple Syrup, half an ounce,

Spring Water, three ounces.—Mix.

Dose, from one to three tea-spoonsful every two or three hours.

DIAPHORETICS.

ANTIMONIAL WINE.—Dose, from three to ten drops every two hours.

SALINE JULEP.—Take of

Lemon Juice, one ounce,

Salt of Tartar, (Carbonate of Potass), four scruples.

After the effervescence, add

Syrup, two drachms,

Simple Cinnamon Water, half an ounce,

Spring Water, six ounces.

Mix them.

Dose, three or four tea-spoonsful every two or three hours, for children.

DIAPHORETIC MIXTURE.—Take of

Emetic Tartar, two grains,

Boiling Water, eight ounces.

Dissolve the powder, by rubbing it carefully with the water in a glass mortar.

Dose, from one to three tea-spoonsful every three hours.

As this medicine is quite tasteless, it may be given mixed with any other liquid except tea. If it excite sickness, it is to be diluted, by adding half as much, or an equal quantity of water, according to circumstances.

DIURETICS.

NITROUS MIXTURE.—Take of

Nitrate of Potass, (vulgarly called Saltpetre), one drachm,

Refined Sugar, half an ounce.

Rub them together, and add eight ounces of Spring Water, so as to dissolve both the nitre and the sugar

Dose, from two to four tea-spoonsful, for children.

DIURETIC MIXTURE.—Take of

Dulcified Spirit of Nitre, one drachm,

Syrup, half an ounce,

Spring Water, three ounces.

Mix them.

Dose, from one to two table-spoonsful every two or three hours.

DIURETIC DRINKS are made by dissolving cream of tartar, or the acetite of potass, in boiling water, and adding as much sugar as shall render the drink agreeable. One drachm of cream of tartar and two drachms of the acetite of potass are the proportions to a quart of water.

EMBROCATIONS.

MILD EMBROCATION.—Two or three ounces of the Opiate Electuary of the Edinburgh Pharmacopœia, spread upon leather.

MORE POWERFUL EMBROCATION.—Add to two ounces of the Opiate Electuary half a drachm of Powdered Cantharides, and two drachms of Amber Oil.

EXTEMPORANEOUS EMBROCATIONS—May be formed by means of Flour of Mustard, spread over a bread and milk poultice, with the addition of Vinegar, or of Oil of Turpentine.

EMETICS.

IPECACUAN POWDER.—Dose, from three to fifteen grains.

IPECACUAN WINE.—Dose, from two tea-spoonfuls to a table-spoonful every quarter of an hour, till vomiting take place.

N. B.—In some rare cases, as in Croup, Hooping-Cough, &c. it is necessary to add to the ipecacuan powder a very small portion of the tartrate of antimony, or of the sulphate of zinc; but this must never be hazarded without the advice of a regular practitioner.

EYE WATERS,

May be formed by dissolving a grain of the acetite of lead; or of zinc, or of the sulphate of zinc, or of pure opium, in an ounce of rose water. A weak infusion of chamomile flowers or of green tea, sometimes forms a very useful eye water.

LAVEMENS.

EMOLIENT LAVEMENT.—Take of
Common Salt, a tea-spoonful,
Fine Olive Oil, a table-spoonful,
Warm Water, from six to twelve ounces.
Mix them.

LAXATIVE LAVEMENT.—Take of
Phosphorated Soda, two drachms,

Boiling Water, eight ounces,

Add, when nearly cool,

Castor Oil, a table-spoonful.

Mix them.

ANODYNE LAVEMENT.—Take of

Laudanum from five to twenty drops (according to the age),

Beef-tea, two table-spoonsful.

Mix them.

CAMPHOR LAVEMENT.—Take of

Camphor from ten grains to one scruple, of Alcohol ten drops, of refined Sugar half an ounce, and of common Magnesia half a drachm ; reduce them to very fine powder, and then add gradually two table-spoonsful of Boiling Water, and as much Mucilage of Gum Arabic.

LAXATIVES.

ALOES (SOCOTRINE).—Dose, from three to eight grains.

COLD-DRAWN CASTOR OIL.—Dose, from one tea-spoonful to a table-spoonful.

GAMBOGE.—Dose, from one to two grains every six hours.

JALAP.—Dose, from three to fifteen grains.

MAGNESIA (CALCINED).—Dose, from three to fifteen grains.

MANNA.—Dose, for infants, from half a drachm to two drachms.

SCAMMONY.—Dose, from one to six grains.

SENNA—May be given in the form of infusion or of syrup.

RHUBARB.—Dose, from two to fifteen grains.

N. B.—It is often necessary to combine two or more of the above medicines in one dose.

LINIMENTS.

FOR SCALDS AND BURNS.—Take of

Litharge,

Vinegar, each two drachms,

Olive Oil, six drachms.

To be made into a liniment, by adding the vinegar and

oil alternately, in small quantities, to the powdered litharge, and rubbing the whole together till the liniment be of a pale flesh colour, and of the consistence of cream.

LINIMENT FOR THE RING-WORM.*—Take of the dried Sulphate of Alumine and of the Muriate of Mercury each six drachms, of the Semivitreous Oxyde of Lead one ounce, of the White Oxyde of Lead, of Venice Turpentine, each four ounces, and of Axunge one pound. Make them into an ointment. This is best done by reducing the dry materials to a fine powder and adding them gradually to the melted Axunge and Venice Turpentine.

LOTIONS.

MILD LOTION.—Dissolve half an ounce of the Carbonate of Potass in an English pint of spring water.

ANOTHER MILD LOTION.—Mix one part of the solution of the Acetite of Ammonia with six parts of distilled water.

MORE POWERFUL LOTIONS—May be formed by any of the ordinary metallic solutions, or by lime water.

POWDERS.

FOR SCALDS AND BURNS.—Take thirty grains of Camphor and reduce it to powder by means of Alcohol, then add one ounce of Prepared Chalk; let them be carefully rubbed together in a glass or Wedgewood's ware mortar till they form an impalpable powder.

FOR ULCERATIONS.—May be made of Prepared Chalk, or of Calamine, or Tutty Powder, or of Peruvian Bark with Camphor, or of the Oxyde of Zinc, according to circumstances.

STRENGTHENING MEDICINES.

The ordinary preparations of Bark and Myrrh.

* The Unguentum ad Scabiem of Henry Banyer.

SUGAR OF STEEL.—Sold in Edinburgh by the Confectioners under the title of Steel Carvy.—Dose for Children, a tea-spoonful once a day.

WINE OF STEEL.—Dose, from five to twenty drops twice a day.

THE END.

